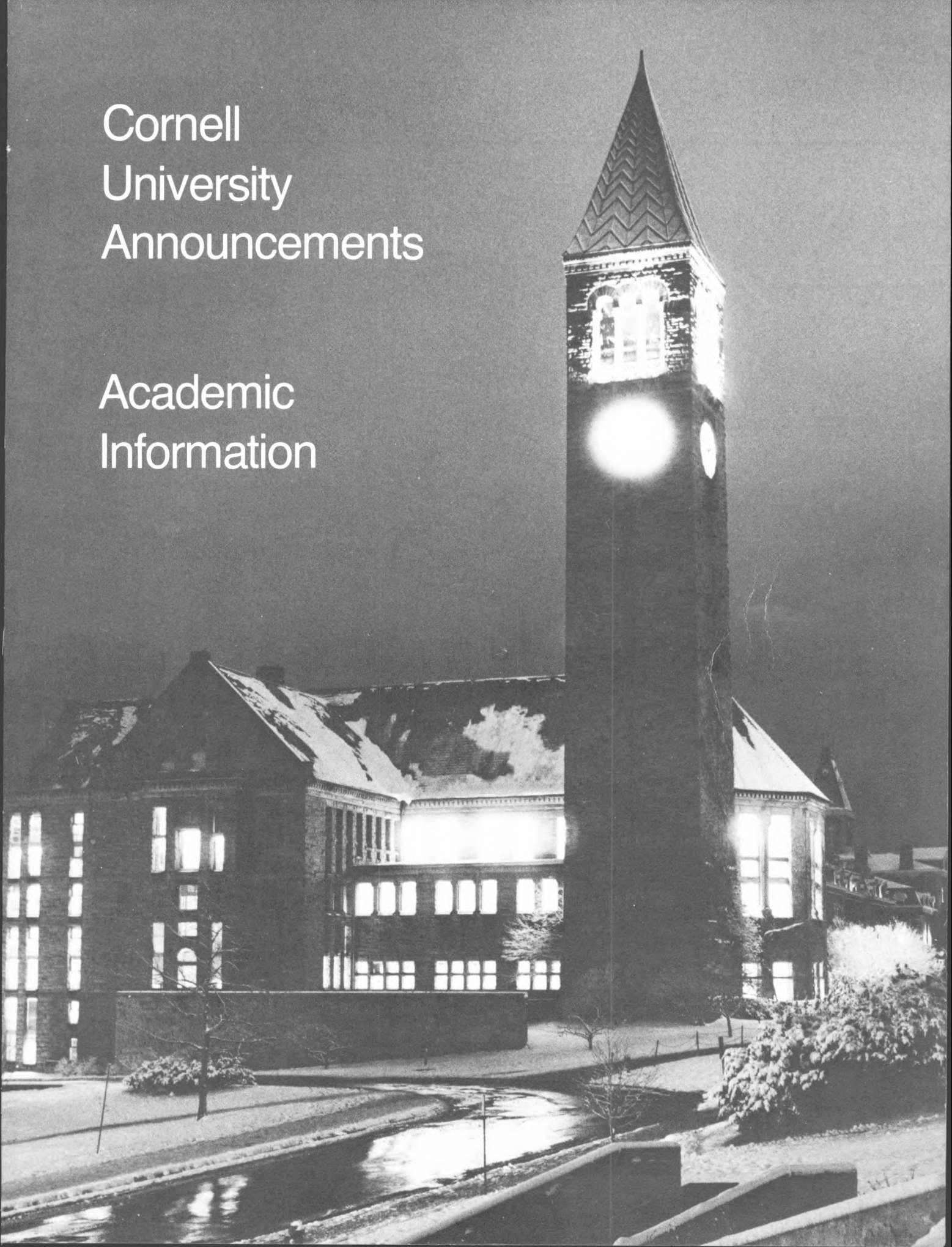
Cornell University Announcements

Academic Information



Cornell University

Academic Information

1978–79

Cornell University Announcements

Volume 70 of the Cornell University Announcements consists of sixteen catalogs, of which this is number 2, dated January 15, 1978. Publication dates: sixteen times a year (three times in August and September; twice in January, June, and July; and once in March, May, October, and December). Publisher: Cornell University, Sheldon Court, 420 College Avenue, Ithaca, New York 14853. Second-class postage paid at Ithaca, New York.

Introduction

The rules and regulations stated in this *Announcement* are for information only and in no way constitute a contract between the student and Cornell University. The University reserves the right to change any regulation or requirement at any time.

This book is intended to provide matriculants and faculty advisers with information on academic requirements and related academic information. Its focus is primarily undergraduate. For information on course offerings, see *Cornell University: Description of Courses*.

The information contained in this *Announcement* concerns the Ithaca campus only and does not pertain to the Cornell University Medical College or the Graduate School of Medical Sciences, which are located in New York City. For further information concerning these units see the Announcements of the Medical College and the Graduate School of Medical Sciences.

Cornell University Calendar 1978–79

Fall Semester

Sunday, August 27	New-student Orientation begins Residence halls open
Monday and Tuesday, August 28–29	Placement exams and new-student advising
Wednesday, Thursday, and Friday, August 30, 31, September 1	Registration
Monday, September 4	Instruction begins Add/drop/change period begins
Friday, September 22	Last day for adding courses and last day for late registration
Friday, Saturday, and Sunday, October 6, 7, 8	New student Parents' Weekend
Thursday, Friday, and Saturday, October 19, 20, 21	Trustee-Council Weekend
Friday and Saturday, October 27, 28	Homecoming Weekend
Monday, October 30–Friday, November 10	Course enrollment for spring semester
Wednesday, November 22	Thanksgiving recess: instruction suspended, 1:10 p.m.
Monday, November 27	Instruction resumes
Saturday, December 9	Fall term instruction ends, 1:10 p.m.
Sunday, December 10–Thursday, December 14	Reading period
Friday, December 15–Saturday, December 23	Final examination period
Saturday, December 23	Closing date of fall semester; residence halls close

Spring Semester

Sunday, January 14	Residence halls open
Tuesday and Wednesday, January 16 and 17	Registration
Monday, January 22	Instruction begins, 8:00 a.m. Add/drop/change period begins
Friday, February 9	Last day for adding courses and last day for late registration
Saturday, March 17	Spring recess begins, 1:10 p.m.
Monday, March 26	Classes resume
Monday, April 9–Friday, April 20	Course enrollment for fall semester
Saturday, May 5	Spring semester instruction ends, 1:10 p.m.
Sunday, May 6–Sunday, May 13	Reading period
Monday, May 14–Tuesday, May 22	Final examination period
Wednesday, May 23	Residence halls close
Monday, May 28	Commencement

Summer Session Calendar 1979

Three-Week Session	June 4–June 26
Eight-Week Session	June 18–August 10
Six-Week Session	June 27–August 10

The dates shown in the Academic Calendar are subject to change at any time by official action of Cornell University.

In this calendar, the University has scheduled classes on religious holidays. It is the intent of the University that students missing classes due to the observance of religious holidays be given ample opportunity to make up work.

Schedule of Graduate Tests

Graduate Record Examination

Saturday, October 21, 1978
Saturday, December 9, 1978
Saturday, January 13, 1979
Saturday, February 24, 1979
Saturday, April 28, 1979
Saturday, June 9, 1979

Graduate Management Admission Test

Saturday, October 28, 1978
Saturday, January 27, 1979
Saturday, March 17, 1979
Saturday, July 7, 1979

Law School Admission Test

Saturday, October 14, 1978
Saturday, December 2, 1978
Saturday, February 3, 1979
Saturday, April 21, 1979
Saturday, June 23, 1979

Medical College Admission Test

Saturday, September 30, 1978
Saturday, April 28, 1979

For further information about tests and dates call the Career Center at 256-5221.

1978

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1979

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Contents

The University

History

Cornell University is unique among institutions of higher education in its vast complexity and variety. In order to understand its unique character, it is necessary to know something of its history.

Two extraordinary men, Ezra Cornell and Andrew Dickson White, were both members of the New York State Senate when the Morrill Act, the "Land Grant Act," was adopted by the Congress. Cornell was a farm-bred mechanic who lived in Ithaca. His career of poverty-stricken enterprises had been abruptly transformed by great wealth when the scattered telegraph lines he had built were consolidated to form Western Union. He wanted to provide training in the practical arts and sciences for sons and daughters of the laboring classes. White was a gentleman and a cosmopolitan, a scholar who was impatient to offer vigorous and progressive intellectual education as an alternative to the fusty drills in the classics so typical of the academies of his day.

At first the backgrounds and visions of Cornell and White seemed hopelessly incompatible, and they opposed each other as the legislature sought to find the best use for New York's share of the federal land scrip provided by the Morrill Act. Happily, however, both became captivated at the same time by the idea of uniting in a single university their separate ambitions, and from that moment they worked together to create "... an institution where any person can find instruction in any study."

Cornell pledged his farm for a campus and half a million dollars for endowment if the legislature would commit the proceeds of the land grant to the new university. Thus in April, 1865 the University was incorporated by an act of the legislature, as an endowed institution with both public and private funds, and the first classroom building on the Cornell campus, barely completed in time for the opening of classes in 1868, was named after Senator Justin Smith Morrill, author of the land-grant bill in Congress.

In time, the State of New York assumed further responsibility for the University. Most of the state's commitment is to support four of the present colleges, known on campus as the statutory colleges: the College of Agriculture and Life Sciences, the College of Human Ecology, the School of Industrial and Labor Relations, and the College of Veterinary Medicine. The remaining colleges are known as the endowed colleges and include the College of Arts and Sciences; Architecture, Art, and Planning; and Engineering; the School of Hotel Administration; the Law School; the Graduate School of Business and Public Administration; and the Graduate School.

The Cornell University Medical College and the Graduate School of Medical Sciences are located in New York City. Agricultural Experiment Stations are located in Geneva, New York and in Ithaca; the Cooperative Extension Service, associated primarily with the Colleges of Agriculture and Life Sciences and of Human Ecology, is administered from Ithaca with county agents and offices throughout the state; and the Extension Division of the School of Industrial and Labor Relations has offices in the major metropolitan areas of the state.

Cornell thus has many of the characteristics of the older endowed colleges of the East, but also shares some of the commitments and programs of the great state universities to the west. As Cornell's third president Jacob Gould Schurman said, "The classification of American universities should be three-fold and not two-fold, for in the United States we have endowed universities, state universities, and Cornell University. ..."

Several of the distinguished faculty and benefactors in the early history of Cornell are commemorated in many campus buildings: White, Sage, Goldwin Smith, Sibley, Barnes, Bailey, Comstock, and others. The first woman student was admitted in 1870, two years after classes began, and the first woman graduated from Cornell in 1873 at a time when it was still rare for a woman to attend college. From its earliest days foreign students have been a vital element in Cornell's population.

Today Cornell continues the tradition of maintaining a distinguished faculty and many internationally recognized leaders in their fields are to be found among its approximately 1,500 members. The library system is one of the ten largest academic libraries in the country. Two of Cornell's internationally known research facilities are the National Astronomy and Ionosphere Center in Puerto Rico, which has the world's largest radio-radar telescope, and the world's largest electron synchrotron on the Ithaca campus.

In spite of its complexity, however, Cornell remains a university of relatively modest size. The undergraduate student body in the fall of 1977 was approximately 11,785, distributed among the seven undergraduate colleges and schools. There were more than 4,500 graduate students for a total on the Ithaca campus of approximately 16,340.

Location

Ithaca is one hour by plane from New York City and five hours by car or bus. Other major metropolitan areas, such as Chicago, Pittsburgh, and Washington, are accessible by direct commercial flights.

Ithaca is a city of about 28,000 in the Finger Lakes Region of New York State, a beautiful area of rolling hills, deep valleys, scenic gorges, and clear lakes. On East Hill overlooking Cayuga Lake, the campus covers 740 acres with more than 400 University buildings. Deep gorges with many waterfalls bound the campus on the north and south. Nearby Sapsucker Woods, a 180-acre bird sanctuary maintained by the University, contains miles of nature trails.

Open countryside, state parks, and year-round recreational facilities are only minutes away providing excellent opportunities for sailing, swimming, skiing, ice skating, hiking, camping, and other outdoor activities to supplement the recreational facilities on campus.

Admission to Cornell

Citizens of the United States or Canada, persons holding permanent resident visas or refugee visas from the United States, and landed immigrants of Canada seeking admission to an undergraduate school or college at Cornell should request application forms from the Office of Admissions, 410 Thurston Avenue, Ithaca, New York 14853.

Correspondence regarding entrance to the Graduate School, the Graduate School of Business and Public Administration, the Law School, the Medical College, the Graduate School of Medical Sciences, the School of Nursing, and the College of Veterinary Medicine should be addressed to the individual units.

Foreign Students. Any foreign national who does not hold a permanent resident visa or refugee visa from the United States is defined by Cornell University as a foreign student. All foreign students (except Canadian citizens and landed immigrants of Canada) are prescreened to determine whether they meet the entrance requirements for the Cornell school or college in which they have an Interest. Special preliminary applications are required for this purpose and can be obtained by writing the Assistant Director for Foreign Student Admissions, International Student Office, Cornell University, 200 Barnes Hall, Ithaca, New York 14853. These preliminary applications must be received thirty days before the date on which final applications are due. Applicants themselves may not determine whether they are foreign students since this is determined by their visa status. See p.25 for further information applicable to foreign students.

General Admission Policy

It is the policy of Cornell University actively to support equality of educational and employment opportunity. No person shall be denied admission to any educational program or activity or be denied employment on the basis of any legally prohibited discrimination involving, but not limited to, such factors as race, color, creed, religion, national or ethnic origin, sex, age, or handicap. The University is committed to the maintenance of affirmative action programs which will assure the continuation of such equality of opportunity.

A brochure describing services for the handicapped student may be obtained by writing to the Office of the Dean of Students, Cornell University, 103 Barnes Hall, Ithaca, New York 14853. Other questions or requests for special assistance may also be directed to that office.

Each of the undergraduate schools and colleges is limited in the number of students it can accommodate. The number of qualified applicants for freshman and transfer admission exceeds the number that can be admitted. Candidates may submit only one application for a given semester and be considered for admission by only one undergraduate division at a time. Applicants compete only with those seeking admission to the same Cornell school or college. Each undergraduate unit has its own selection committee, admitting those who have best demonstrated they deserve acceptance. Those schools and colleges that focus on professional programs emphasize the selection of students who, having met all other qualifications, show the best evidence of being suited for the field of work to which the course of study is directed.

Choosing the undergraduate unit to which to apply is most important and should be given careful thought. *Requirements for admission and graduation vary considerably from one division to another.* These should be considered in relation to a student's abilities, interests, achievements, and academic and vocational goals. Secondary school counselors should be consulted and Cornell admissions officers are always ready to assist prospective applicants.

While students at Cornell do transfer from one undergraduate school or college to another after enrolling, such internal transfer cannot be guaranteed. Counseling help is available to those who find themselves in an inappropriate course of study and every effort is made to assist students in transferring within the University so they can satisfactorily complete an undergraduate program. Those who are unable to transfer directly from one Cornell school or college or another, but who appear to have a reasonable chance for academic success in another area of study, may be admitted to the Division of Unclassified Students for one or two semesters. Students in the division enroll in the same courses they would normally take if they were registered in the new academic unit while attempting to meet the transfer requirements of that school or college.

Academic Competence

As an educational institution, Cornell University is devoted primarily to the intellectual development of its students. Those selected for admission must have demonstrated clearly the intellectual capacity to carry on the academic work and to profit from the instruction. Intellectual preparedness for study at Cornell is judged mainly by the candidate's secondary school record (and college record, if a transfer student), the recommendations of school authorities, and standardized college admissions tests.

Extracurricular Activities

To supplement the basic requirement of demonstrated intellectual capability, evidence of the candidate's ability to make effective use of nonacademic capabilities is an important consideration in admissions decisions. This factor is judged by the character and quality of the student's participation in school and community extracurricular activities, and by the use made of vacation periods. Work experience or other activity related to the candidate's vocational or professional objective is also important.

Character, Personality, and Motivation

The intangible but important factors that form good character and an effective personality all receive full consideration by the selection committee. Evidence of a sound motivation for attaining higher education in general, and for pursuing a specific field of education is also desirable. Capacity for leadership and concern for others receive due weight. Those factors are usually judged by the report from the applicant's secondary school and by interview reports, when available. Some University divisions require interviews, whereas in others the need for an interview is left up to the applicant. Interviews are also conducted by alumni secondary school committees

operating in many sections of the country; such contacts are often helpful in providing the candidate with additional information about Cornell.

Admissions Conferences, Personal Interviews, and Tours of the University

Prospective students and their families are encouraged to visit the campus and to arrange for discussions with members of the faculty or admissions staff and in other ways to become familiar with the University. The University Office of Admissions and the undergraduate schools and colleges offer a variety of opportunities for group conferences and individual interviews. All *individual* interviews are by appointment. Interested students are encouraged to write or telephone suggesting a date and time, and alternates if possible, at least three weeks in advance of the date requested. Each undergraduate division arranges its own individual interviews and group meetings and students should communicate with the appointment secretary at the address or phone number listed on the following pages for each school or college.

University Group Admissions Conferences

These group sessions are designed especially for those who have limited knowledge about the University or who are unsure how their interests might best be accommodated by a Cornell undergraduate program. Conferences, which are open to students, parents, and other interested persons, include information on the admissions process, financial aid, educational programs, and campus facilities, and also provide opportunity for questions and answers. Sessions normally last from forty-five minutes to one hour. They are held at the University Office of Admissions, 410 Thurston Avenue on Monday and Friday at 9:30 a.m. and 11:00 a.m.; Tuesday, Wednesday, and Thursday at 9:30 a.m., and Saturday at 9:00 a.m. Those wishing to participate are encouraged to make appointments by writing the Office of Admissions or by telephoning 607/256-5241 a few days in advance of a visit, but appointments are not required. Parking is available at the office and arrangements for on-campus parking will be made for those wishing to visit other facilities.

Required Individual Interviews

The College of Architecture, Art, and Planning and the Schools of Hotel Administration and Industrial and Labor Relations require personal individual interviews as a part of the application process.

Architecture, Art, and Planning. Candidates for admission or prospective applicants are encouraged to visit the campus in the fall of the year before anticipated matriculation for the required interview. An on-campus interview with a faculty member in the Department of Architecture or the Department of Art is most desirable. In instances where applicants are unable to come to Ithaca, it may be possible to schedule an interview with a graduate of the program in the prospective student's area. Portfolios of work, if available, are requested by both the Department of Architecture and the Department of Art. These should be brought to the interview either in original form, copies, or slides. Examples of class assignments and/or independent work are acceptable. In instances where neither an on-campus nor off-campus interview is possible, candidates should contact the admissions secretary regarding submission of a written statement in lieu of the interview. Interview arrangements may be made by contacting the Admissions Secretary, Sibley Hall, or calling 607/256-4376.

Hotel Administration. It is the responsibility of the prospective student to arrange for the required interview. On-campus interviews are strongly encouraged, but when a visit to the campus is impossible, arrangements can be made for interviews in other locations. Contacts with other representatives of the University do not substitute for the required individual interview arranged through the Admissions Office in the School of Hotel Administration. Appointments are made through the Admissions Secretary, Statler Hall; telephone 607/256-6376.

Industrial and Labor Relations. The School initiates correspondence directly with students about required interviews after they have applied for admission. Alumni interviews or informational visits to the School do not substitute for the formal interview. Arrangements for informational visits, generally scheduled on Monday or Friday afternoons, may be made by writing the Admissions Office, 101 Ives Hall, or calling 607/256-2221.

Optional Individual Interviews and Group Sessions

The *College of Agriculture and Life Sciences* offers admissions conferences, either in small groups or individually, by prior appointment from May 1 to late December. Individual appointments for prospective freshmen and transfer applicants are available, as time allows, weekdays from 10:00 a.m. to 12:00 noon and 2:00 to 4:00 p.m. Group sessions are scheduled on Monday and Friday afternoons at 2:00 p.m. Transfer applicants are usually granted individual appointments to discuss their preparation for transfer. Appointments and conferences are not scheduled on Saturdays or University holidays. Address: 195 Roberts Hall; telephone 607/256-2036.

The *College of Arts and Sciences* offers two alternatives for meeting with representatives of the College. On Saturdays at 10:00 a.m., from September until mid-January (except holidays), an admissions group conference is held to accommodate those who visit the campus on weekends. Parents are invited to attend. The admissions representative and at least one student from the College discuss academic programs, admission requirements and procedures, and some aspects of student life on campus. Questions are welcomed. Guests are invited to take the campus tour following the conference. Personal interviews for prospective freshmen may be scheduled Monday through Friday from 9:00 a.m. to 4:00 p.m., except from January 15 through May 1. Transfer applicants may arrange for interviews until mid-April. Arrangements for personal interviews or group conferences are made by contacting the Admissions Secretary, 150 Rockefeller Hall; 607/256-4833.

The *College of Engineering* highly recommends, but does not require, that prospective students visit the campus for personal interview. Interview appointments are generally available from 9:00 a.m. to 12:00 noon and 1:00 to 4:00 p.m. on weekdays, and 9:00 to 11:30 a.m. on Saturdays according to the schedule below. Appointments

for interviews are strongly recommended to assure the availability of an admissions staff member and are made by contacting the Admissions Secretary, 221 Carpenter Hall; telephone 607/256-5008.

Dates	*Interview Times*
Sept. 1–Feb. 1 and Apr. 15–June 1	Any weekday and Saturday mornings, except official University holidays
Feb. 1–April 15	Monday and Friday and Saturday mornings, except official University holidays
June 1–Sept. 1	Weekdays only, except official University holidays

The *College of Human Ecology* offers small group conferences on Monday and Friday at 10:30 a.m. and 3:00 p.m. all year. From May 1 until February 1, individual conferences may be scheduled as time permits on Tuesday, Wednesday, and Thursday from 10:00 a.m. to 12:00 noon and 2:00 to 4:00 p.m. Prospective transfers may arrange appointments until April 1. A group conference is also available at 10:00 a.m. on one Saturday each month in the fall. Appointments for all conferences should be made at least one week in advance of the visit to campus by contacting the Admissions Secretary, N101 Martha Van Rensselaer Hall, or calling 607/256-5471.

Financial Information

Tuition, Fees, and Expenses

Tuition for Academic Year 1978–79

Endowed Divisions

Undergraduate	
Architecture, Art, and Planning	$4,800
Arts and Sciences	4,800
Engineering	4,800
Hotel Administration	4,800
Unclassified	4,800
Graduate	
Business and Public Administration	
First-year student	5,100
Second-year student	4,650
Law School	4,800
Graduate School: with major field of study in an endowed division	4,800

Statutory Divisions

Undergraduate	
Agriculture and Life Sciences	
Resident*	2,025
Nonresident	3,350
Human Ecology	
Resident*	2,025
Nonresident	3,350
Industrial and Labor Relations	
Resident*	2,025
Nonresident	3,350
Graduate	
Graduate School:	
with major field of study in Agriculture and Life Sciences, Human Ecology, or Industrial and Labor Relations	2,300
with major field of study in Veterinary Medicine	3,500
Veterinary Medicine	
Resident*	3,500
Nonresident enrolled prior to 7/1/76	4,350
Nonresident enrolled after 7/1/76	5,000

Summer Session

Per credit hour	100

Extramural Division

Per credit hour	115

*New York State residency status for tuition purposes is determined by the college in which the student is enrolled.

Cornell offers an installment plan for payment of educational expenses through Academic Management Services, Inc. The cost of the service, including a "life benefit coverage," is $30 per year. Information about this plan will be mailed to parents of Cornell students by Academic Management Services, 1110 Central Avenue, Pawtucket, Rhode Island 02861.

Fees and Expenses

Applicants to Cornell pay a nonrefundable $25 application fee when submitting an application for admission.

Accepted candidates who plan to enroll at Cornell are required to pay a one-time $50 registration fee by a date specified on the registration coupons that accompany the letter of acceptance. The fee is not applied to tuition charges and is not refundable after the stated due date.

Room and Board

If a student plans to live in a University residence hall, there is a $25 nonrefundable housing application fee. A $100 security deposit is required at the time the first room contract is signed but at the conclusion of the final term spent in a residence hall, this deposit will be refunded, with interest, less any charge for room damages. If a student elects to participate in the optional bed linen rental and laundering plan, the cost will be $26 or $33 per academic year, depending on whether towels are included with the

sheets and pillowcases. For another $11 students may rent a blanket, pillow, and bedspread for the academic year.

Room and board on campus is estimated at $2090 for 1978–79 for single students. Room accommodations range in price from approximately $708 to $1448 for 1978–79. For specific information on size, style, and rates of the various residence halls, contact the Housing Office, 223 Day Hall. The dining options range from $290 per semester for ten meals per week to $490 per semester for twenty meals per week for 1978–79. A nonrefundable $70 annual Co-op membership fee is charged if a student wishes to join one of the seven different Co-op dining plans. The only excepted students are those registered for only one semester. A student who takes an authorized leave of absence for the full spring semester or graduates at midyear receives a $25 membership fee rebate upon request. A student who is new to Cornell second semester or was not registered first semester pays a $45 nonrefundable fee. Cancellations of the Co-op dining program must be made at 233 Day Hall. Members will receive a prorated refund of the meal plan option for the period after cancellation.

Students living in Risley Hall have a required board plan of ten meals a week. Their meal plan has an identical membership fee and restrictions to Co-op's and permits a student to switch from Co-op to Risley or vice-versa without penalty. The Co-op program does not cover the University recess periods of fall semester break, Thanksgiving, Christmas, intercession, spring recess, and summer.

Budgets for married students and off-campus room and board vary considerably. One can pay more or less than charges for University housing and dining. For more detailed information concerning housing, contact the Department of Residence Life, 223 Day Hall; for dining information contact the Department of Dining Services, 233 Day Hall.

Books and Supplies

The cost of books and supplies and personal expenses is more difficult to estimate since charges vary according to courses taken and styles of living. The cost of books and supplies is estimated at $230 for 1978–79, although students in the College of Architecture, Art, and Planning and upperclass students in the Department of Design and Environmental Analysis are advised to budget an additional $150. Students taking their required year of physical education courses will pay approximately $20 for locker, uniform, and gym equipment.

Personal Expenses

Personal expenses, including clothing, laundry, cleaning, entertainment, and incidentals are estimated at $530 for 1978–79. This figure does not include travel expenses and the student should estimate travel costs for at least two roundtrip fares between home and Ithaca. Nonimmigrant foreign students should estimate an additional $400 to $500 because of insurance, living, and travel allowance during the semester break and holidays, plus an additional settling-in allowance for the purchase of warm clothing, extra linens, taxi and bus fares, and other initial purchases.

Medical Care

Medical care is included in the tuition and fees and entitles the full-time student enrolled at Cornell in Ithaca to unlimited visits to Gannett Medical Clinic, routine laboratory and x-ray examinations when prescribed by University physicians, counseling services at the clinic, and infirmary care at Sage Infirmary for up to fourteen days per semester, including emergency surgical care when referral is made through the Health Services. It does not cover the summer months unless the student is enrolled as a summer student.

A supplementary accident and health insurance plan provides additional coverage for medical expenses not ordinarily covered. It is mandatory for nonimmigrant foreign students to carry this insurance. This plan covers hospital care and charges for surgical procedures, care at Sage Infirmary in excess of fourteen days, consultations with a private physician or specialist, house calls, and other expenses connected with illness or injury, even when outside Ithaca. Students are covered by this plan for the entire twelve months. Only by filling out a waiver form, which may be obtained at Gannett Clinic, the Bursar's Office at 260 Day Hall, or at University registration, will students *not* be covered and *not* charged for this plan. The cost of this supplementary plan for 1978–79 is approximately $84.

Additional services performed at Sage Infirmary or Gannett Medical Clinic, such as travel inoculations, optional x-ray and lab tests, eye refraction exams for glasses, glasses, optional physical exams, optional prenatal and obstetrical care, and dental care will not be covered by this plan and students will be charged on an individual basis.

Course Fees

Certain courses including some physical education courses, labs, field trips, seminars, and studio courses have fees attached to them. In each case, the fee should be stated in the description accompanying the course in the *Cornell University Announcements: Description of Courses.* Students taking instrumental music will have charges ranging from $97 to $190 per term for individual instruction and practice rooms.

Optional Student Charges

Cornellcard (charge card)	$ 5.00
Bus pass	25.00
Language Placement Test fee	4.00
MAT Test fee (Miller Analogies Test)	6.00
Doppelt Mathematical Reasoning Test fee	6.00
Career Center Placement fee (to send out educational credentials)	2.00
Transcript fee: first copy	2.00
each additional copy	1.00
Guidance and testing series of vocational/academic guidance tests	30.00
Big Red 50-50 Card*	10.00
Instrumental instruction and practice rooms	$97–190.00
Parking permit	40.50
Health careers fee (to cover costs associated with compilation and mailing of the committee letter of evaluation)	25.00
Photo-taking service for Co-op Dining card	.75
Rental of band instruments	10.00

* For regularly scheduled athletic events, students pay one-half the normal admission charge if they own a Big Red 50–50 Card.

Linen rental and laundry	$26–33.00
Blanket, pillow, and bedspread rental	11.00
Tuition installment plan	30.00
Excess hours tuition for students in statutory units taking more than allowed number of hours in the endowed units per credit hour (approximate)	$116.41
Physical examination	25.00
Tetanus toxoid inoculation	3.50

Penalties

Penalties for lost items and for failure to meet certain deadlines are listed below:

Late registration fee	$10.00
Late Preregistration fee	10.00
In absentia fee: undergraduate	15.00 per term
graduate	75.00 per term
Make-up exam	10.00
Late course enrollment fee*	10.00
Course add/drop/change fee†	10.00
Failure to check out chemistry desk	5.00
Bad check fine – bursar	10.00
Bad check fine – other	4.00
Failure to bring Co-Op Card (temporary voucher) (refunded if card is lost and new one issued)	2.00
Replacement of lost or mutilated Co-Op Card ($3.00 refunded if found)	5.00
Replacement of lost I.D. Card	5.00
Replacement of bus pass	5.00
Room change fee	15.00
Lock replacement	10.00
Key replacement	1.00
Loan key for unlocking doors for students	1.00
Loss of Cornellcard	5.00
Key loss (Unions fee)	5.00
Check cashing fee	.10 per check
Library fines	.10 per day
Prelim file, overdue fine	.50 per hour
Parking fine	$5.00–15.00 per violation
Failure to order cap and gown by date specified	2.00

* Applies only to Colleges of Architecture, Art, and Planning; Arts and Sciences; Engineering; and Human Ecology.

† Applies only to Colleges of Architecture, Art, and Planning; Arts and Sciences; and Human Ecology.

Refund Policies

Part of the amount personally paid for tuition will be refunded if the student obtains an official certificate of Leave of Absence or Withdrawal at the office of the dean or director of the academic division involved. Students who terminate their registration in the University during a regular term in this manner will be charged tuition from the registration day to the effective date of the certificate as follows: first week, 10 percent; second week, 20 percent; third week, 30 percent; fourth week, 40 percent; fifth week, 60 percent; sixth week, 80 percent; seventh week, 100 percent; except that no charge will be made if the effective date is within the first six days, including registration day.

The University makes available tuition insurance which provides refunds in the event of leave of absence or withdrawal for medical or emotional reasons. Complete details regarding this coverage and applications accompany the August tuition bill.

The $25 application fee for University residence halls is nonrefundable except when lack of space prevents the offer of a room assignment. The $100 security deposit which guarantees a contract for a room in the residence halls is refundable, less damage charges, upon fulfillment of the contract.

Students participating in a prepaid dining plan who withdraw from the plan during a semester are eligible for a prorated refund based on the number of days the contract was in effect.

In addition to refunds for which students may be eligible, those receiving financial aid from the University who withdraw during a term will have their aid reevaluated, possibly necessitating repayment of a portion of aid received. Repayment to aid accounts depends on the type of aid received, government regulations, and the period of time in attendance. A partial semester will generally count as one of the eight semesters of financial aid eligibility normally allowed a student.

Excess Hours Tuition

Students in the state-supported divisions who wish to take courses in the endowed divisions beyond the hours allowed free under the rules of those state-supported divisions, may be allowed to do so on payment for the additional hours of instruction at approximately $116 per credit hour. Financial aid recipients can request additional loan or job assistance to cover such additional tuition.

Billing and Payment Information

Billing

Bills cover charges for the term and list financial aid credit as of the date of preparation. The bill is prepared based on information processed before the beginning of the term. After registration, every effort will be made to correct mistakes.

It is possible that some charges will not be listed on the first bill and will appear on a subsequent monthly bill. A student must be prepared to pay any charges appearing on a subsequent bill even though the student received a financial aid stipend before the billing charges.

Please inform the Office of the Bursar of any change in billing address. Address changes made at other offices will not change the billing address.

Payments

An individual who has outstanding indebtedness to the University shall not be allowed to register or reregister in the University, receive a transcript of record, have academic credits certified, be granted a leave of absence, or have a degree conferred. If students' bills show a previous unpaid balance, they must arrange for payment

by August 20 if they plan to register for the fall semester. University policy precludes the use of any 1978–79 financial aid for payment of past-due charges.

The bursar's office acts as a clearing house for student charges and credits which are placed directly on a student's bill by several departments and offices of the University. *Since the bursar's office does not have detailed records concerning many items that appear on a bill, students should contact the office involved if they have questions.*

All charges are payable in full within twenty days of the billing date. Any amounts remaining unpaid, in whole or in part, after the due date of the statement on which the charges first appeared will be assessed a finance charge at the rate of 1 percent per month (12 percent annual interest rate).

Checks and money orders should be made payable to *Cornell University.* Payment and the top portion of the bill may be mailed to the bursar's office. The student's cancelled check will serve as a receipt. If students desire a separate receipt, they should enclose the entire bill and a stamped, self-addressed envelope.

The University accepts checks only if they are drawn on banks located in the United States.

Students may pay in person by presenting the entire bill and payment to the cashier, 260 Day Hall, between 8 a.m. and 5 p.m., Monday through Friday. Payment by mail saves time and avoids waiting in line at the cashier's window.

For further information, contact the Office of the Bursar, 260 Day Hall, 256-2336.

Payment of Undergraduate Financial Aid

Undergraduate financial aid is administered by the Office of Financial Aid, 203 Day Hall, telephone 607/256-5145. Please direct all questions concerning undergraduate student aid to that office and see pages 12–21.

If charges on a bill are more than covered by University grants, scholarships, and loans, a stipend check will be issued in the student's name. These checks in the amount indicated on the bill may be picked up in Room 130, Day Hall after registration. Before picking up the stipend check, students should be absolutely certain all charges have been included on their bills and that any anticipated adjustments in Cornell aid have been shown on the bill. *No additional financial aid can be expected if students have spent their stipend check and are charged for an expense on a subsequent bill.*

Payment of Non-University Financial Aid

State loan proceeds will usually be disbursed by a check made payable to the student and Cornell University for the entire amount. The University bursar will credit this amount to the student's account when the check is submitted.

National Merit Scholarships are paid to the student in the form of a check drawn by the National Merit Corporation and sent to the Office of Financial Aid. If students wish to apply the amount of the award toward payment of their bill, they must personally pick up the check from the Office of Financial Aid, 203 Day Hall and present it to the cashier, 260 Day Hall. The National Merit Corporation has requested that the University not process their checks through use of power-of-attorney.

Other scholarships from sources outside the University are credited to the bill if they have been received before the date the bill is prepared. Outside awards received after the initial billing date will be applied towards unpaid charges as they are received. *Any finance charges caused by late receipt of these awards will be the student's responsibility.* It is important, therefore, that the student arrange with any outside scholarship donors to have awards mailed to the University as promptly as possible.

If non-University scholarships have been received and all charges have been paid, a stipend check for the excess will be issued in the name of the student. These stipends may be picked up in Room 130, Day Hall.

New York State Awards

Please note that an application must be filed with the state each year for TAP awards. Credit will be given on bills for the amount of the TAP award when the student's name appears on a roster from the state indicating the students' eligibility and the amount of the award.

Medical Insurance

The medical insurance charge on students' bills is for insurance for hospitalization, surgical fees, and major medical coverage for the period of September 1, 1978 through August 30, 1979. The cost of this insurance is lower than the average cost of comparable coverage under other group accident and health insurance policies.

If, because students have other insurance to pay for these medical costs or for other reasons they do not wish to take this insurance, they must submit a completed waiver form at the time of registration or to the bursar's office by September 26, 1978.

Tuition Insurance

To provide a more comprehensive refund program, Cornell makes available the Tuition Refund Plan. This plan provides refunds of tuition in the event of absence or withdrawal due to medical or emotional reasons. Contact the bursar's office for further information.

Prepayment Plan

Students whose parents are participating in the prepayment plan through Academic Management Services (see details under section on Tuition) will be credited with one-half of the budgeted amount on the first statement of each semester. Should the required payments not be received on schedule, delinquent amounts will be charged to the student's bursar account and be subject to the 1 percent finance charge.

Income Tax Deduction

The per student cost of operating the University Health Services facilities is $41 for the 1978 spring semester and $41 for the 1978 fall semster. The Internal Revenue Service has advised that this amount is tax deductible for all who paid full tuition during these semesters.

Bad Check Policy

Important Notice: Any check not honored by the bank will be charged to a student's University account maintained by the university bursar, and a $4 bad check fine will be assessed. These charges will be subject to a *Finance Charge* at the rate of 1 percent per month (12 percent annually).

If all charges are not paid by the end of the semester, students will not be allowed to reregister in the University, receive a transcript of their records, have their academic credits certified, be granted a leave of absence, or have their degrees conferred.

If students are charged with two bad checks in any semester their check cashing privileges will be suspended.

Liability Insurance

Personal property belonging to administrative and support staff, members of the teaching staff, and students is not covered by the University insurance policies. The University is not liable for loss of or damage to any article of personal property anywhere on the premises due to insufficient or excessive heat, fire, water, or steam; the elements; or actions of third persons.

It is recommended that each student carry insurance protection against loss of or damage to personal property. This protection is sometimes provided by the policy carried by parents on their personal belongings. Students should consult their insurance agents for advice. Such insurance is also available through the University (6-3741).

Cornellcard

Cornellcard is a charge card issued by the bursar's office. Any registered full-time student may apply for a Cornellcard by filling out an agreement form and paying a $5 nonrefundable fee. The replacement fee for a lost card is $5. Cornellcard is accepted at the Statler cafeteria and dining room, all Cornell Dining Service facilities, the Cornell Campus Store, the Department of Physical Education, the Cornell University Concert Series, the Willard Straight Box Office, North Campus Union, *The Cornellian,* and Cornell Clippers (hair styling). Itemized monthly statements are mailed to students. These bills must be paid within twenty days of the billing date shown on the statement or finance charges of 1 percent per month (an annual rate of 12 percent) will be added to them. All accounts must be paid in full before each registration period. Accounts with unpaid balances at the close of a semester (other than for the current monthly charges) may not be renewed and University registration will not be permitted, nor transcripts issued or degrees conferred, until all arrears have been paid. The Cornellcard is nontransferable. Loss, theft, or possible unauthorized use should be reported immediately to the Cornellcard Office, 260 Day Hall or call 607/256-6324 which has a 24-hour answering service. The maximum permissible account balance at any one time is $300. Credit privileges may be suspended on any account in excess of the credit ceiling. Changes or corrections to the Cornellcard billing address must be sent to the Cornellcard office.

Programs of Financial Assistance 1978–79

Cornell University, in conjunction with the federal and state governments, offers a variety of scholarship, grant, fellowship, assistantship, loan, and employment opportunities to assist students in financing their education. The following information is provided to inform prospective and continuing undergraduate students of the various alternatives available. Foreign students should refer to information on pages 25–27.

University Undergraduate Aid Programs

Financial Aid Eligibility

To be eligible for Cornell undergraduate assistance, students must be enrolled full time in a degree program at Cornell; be in good standing and making satisfactory progress (defined as eligible to register in a college or school); demonstrate financial need as assessed by the Cornell University Office of Financial Aid; and not owe a refund from any federal grant or loan or be in default on any federal loans received to attend Cornell. Since requirements for good standing and satisfactory progress may vary among the individual schools and colleges at Cornell, students are referred to the registrars of their division for specific information on how to retain or be reinstated with satisfactory progress and in good standing. Students on leave of absence or undergraduate students registered *in absentia* are not eligible to receive Cornell assistance. Priority for undergraduate aid is reserved for new students to Cornell and continuing aid recipients who have met application deadlines. Continuing students applying for aid for the first time are considered on the basis of remaining funds. Cornell reserves the right to revise a student's award package if government regulations, University policy, or sources of funding change during an academic year.

How Financial Need is Determined

Need is determined by subtracting a student's *total family contribution* from the *estimated cost of attendance.* If the Office of Financial Aid considers the student eligible for a scholarship, grant, or loan from a source other than Cornell, it subtracts the estimated amount of this assistance from the student's estimated financial need and attempts to meet fully the remaining need.

Total Family Contribution

In determining a student's eligibility for need-based assistance, Cornell estimates the appropriate contributions from parents of the student if not independent and from the student and student spouse. Students who meet the criteria for financial independence are considered exclusive of parents. For 1978–79, undergraduate students must meet the following criteria to be considered independent: 1) not be claimed as an exemption for federal income tax purposes by any person except spouse (if applicable) for the calendar year(s) in which aid is received and for the calendar year before the academic year for which aid is requested; 2) receive financial assistance of not more than

$600 from any parent(s) for the same period as above; 3) not live for more than two consecutive weeks in the house of a parent during this same period; 4) have spent at least twelve consecutive months in self-support while not engaged in full-time study or living with parents or guardians.

Parent's Contribution. For dependent students, the Office of Financial Aid uses the information provided in the Financial Aid Form (FAF) and the 1977 U.S. federal income tax return (Canadian returns if appropriate) to determine a fair contribution from each family, taking into account the family's income and assets, the number of dependents, educational and medical expenses, taxes paid, certain types of debts, and other factors. This office uses the federally required and approved computation guidelines of the College Scholarship Service (CSS). Cornell reviews the CSS analysis and, if necessary, makes adjustments. Therefore, parental contributions as reported in the CSS Report to Filers option may differ from those cited by Cornell. Families may find the College Scholarship Service's publication *Meeting College Costs* helpful in determining how the parents' contribution is derived. This pamphlet is available from high school guidance counselors and the Office of Financial Aid at Cornell University.

Student's Contribution. Students and spouses are expected to assist in meeting educational costs. The contribution includes earnings from summer and vacation employment, social security, veteran's and other benefits, and 35 percent of personal savings and assets. Summer employment earnings are usually estimated at $650 for incoming freshmen and sophomores and $750 for juniors and seniors. The earnings of students participating in the COSEP (Committee on Special Educational Projects) program, HEOP (Higher Education Opportunity Program), and EOP (Educational Opportunity Program) and dependent low-income students with family incomes below $10,000 are estimated to be $100 less than these amounts. HEOP and EOP freshmen have no summer savings requirement in their first year; however, a contribution will be expected after the first year. Prospective COSEP freshmen accepting an invitation to participate in the summer program will have their summer savings expectation replaced by Cornell scholarship.

Students who can save summer earnings greater than the stated expectation are encouraged to decline all or part of the school-year loan in order to reduce long-term indebtedness.

Students who are unable to save all or part of the summer earnings expectation or whose spouse is unable to meet the expected contribution, may possibly replace this amount with increased school-year job or loan assistance by submitting a written statement explaining why they were unable to contribute as expected. Students participating in the summer College Work Study Program are required to save at least 80 percent of their gross earnings if living at home or 60 percent if living away from home, regardless of the expected contribution indicated on the award letter. Students who receive a work-study award as financial aid to meet the costs of summer school attendance are normally exempt from the summer work-study savings requirement, but are expected to provide the student contribution from summer and vacation employment.

Financial Aid Package

Normally, a combination of gift (scholarship and grant) and self-help (job and loan) assistance is offered. The package for each student usually consists of a job and loan and, if need remains, a scholarship or grant. In 1978–79, the standard self-help is $1,700; need above this amount is normally considered for scholarship.

Application Procedures

The academic year financial aid application for U.S. Citizens, permanent residents, and Canadians consists primarily of the (1) *Financial Aid Form (FAF)* of the College Scholarship Service (CSS), (2) the Cornell Financial Aid Application, and (3) parents' and or student's federal (U.S. or Canadian) income tax return. For 1978–79, the application deadline dates for students entering or continuing in the fall 1978 term have passed. Students may still apply for consideration based on funds remaining available. Transfer applicants for the spring 1979 term must complete the aid application included in the admissions packet, and should obtain a 1979–80 Financial Aid Form (FAF) and send it directly to the Cornell Financial Aid Office by December 1, 1978.

For 1979–80, freshman applicants must complete the Cornell Freshman Student Aid Application included in the admissions packet and obtain a 1979–80 Financial Aid Form (FAF) from their guidance counselor and submit it to the College Scholarship Service (CSS) for processing by January 15, 1979. Early Decision Plan candidates should return all application forms to the Office of New Student Aid, Cornell University, 203 Day Hall, Ithaca, New York 14853 by November 15, 1978. Transfer students entering for fall term 1979 must submit the 1979–80 Financial Aid Form (FAF) to the College Scholarship Service (CSS) by March 1, 1979. Further information and complete instructions are included in the admissions application packet.

Continuing students must submit all applications directly to the Cornell Office of Financial Aid by March 1 for priority consideration. Students may apply after the deadline but may be either denied assistance, given loan and job aid only, or receive lower than normal scholarship awards if funds are limited or exhausted.

Limited assistance is available for summer school study. A summer school application supplement must be submitted in addition to the following academic year's financial aid application. The application deadline is March 1 for the following summer. Scholarship consideration is given only to students who by attending summer school accelerate their academic programs by one semester and to students enrolled in the summer COSEP program. Accelerating students will receive scholarship aid in the same ratio as that to be received in the following academic year. Approved COSEP students will receive a scholarship to pay tuition and a loan to meet the remainder of their need.

Changes in the Award

The Office of Financial Aid anticipates that students will receive the aid package described in their award announcement. It may, however, be necessary for Cornell either to increase or decrease the award if changes occur in enrollment status, family financial status, or the student's own financial resources or expenses. Reductions in aid will

be made first in the scholarship portion of the award. Increases will depend on the availability of funds.

Changes in enrollment status include changing undergraduate colleges at Cornell, taking fewer than twelve credit hours per semester, registering for study away from the University, and withdrawal before the end of the term. Students transferring within Cornell from statutory to endowed units will experience an increase in self-help in the first semester in the endowed unit equal to one-third of the standard annual self-help in effect that year. Reductions in credit hours below twelve credits in a term without approval from the student's college forwarded to the Office of Financial Aid will normally result in a cancellation of Cornell assistance for that term. Students should consult a financial aid counselor before making a change of this type.

Changes in family financial strength include significant discrepancies between the resources described in the Financial Aid Form (FAF) and those reported in the federal income tax return and unanticipated family financial reverses lasting longer than three months. Students should consult a financial aid counselor if a change of this nature occurs.

Changes in student resources include receipt of educational benefits, such as social security benefits, veteran's benefits, and tuition benefits derived from parental employment at a University that were not reported in the application for aid to Cornell and receipt of awards in amounts that differ from the estimates stated in the award announcement or that were not included in the announcement. Students must report receipt of additional resources not considered in the original aid package. Freshmen or transfer students who receive scholarships from private donors may receive a reduction to job-loan values equal to 50 percent of scholarship value up to $300. The remainder will reduce Cornell scholarships first, if any, and then additional job-loan assistance to ensure that the total aid resources do not exceed a student's financial need.

Changes in student expenses, e.g., medical or emergency expenses, may be experienced by some students. If expenses change, students should discuss their budget with a financial aid counselor. It may be possible to adjust the self-help portion of the award to recognize additional allowable expenses; however, since additional loan will increase long-term indebtedness, students are expected to hold normal costs to Cornell's estimates of costs.

Disbursement of Awards

Cornell undergraduate scholarships and grants and BEOG program grants are usually divided in half and credited directly toward the term bill. When possible, awards are applied to the first bill in each term; however, late awards or award revisions will be applied throughout each term. If there are more credits than charges, a stipend check will be issued for the balance. It is the students responsibility to verify the accuracy of billing charges, aid credits, and stipend checks.

Cornell Administered Gift Awards

University scholarships are awarded to undergraduate students who have demonstrated need remaining after estimating scholarships, grants, and loans from sources other than Cornell. The University allocates over $8.5 million for scholarships that range from $50 to $10,000. Students are considered for all scholarships for which they are eligible.

Higher Education Opportunity Program (HEOP) grants are New York State grants awarded by Cornell to educationally disadvantaged students from low-income families who, with special counseling and other supportive services from the University, show promise of success at Cornell. Applicants must be 1) New York State residents; 2) attending the College of Architecture, Art, and Planning; Arts and Sciences; Engineering; or School of Hotel Administration; and 3) academically and economically disadvantaged according to guidelines approved by the New York State Board of Regents and the director of the budget. The amount of financial assistance and other support provided to HEOP participants is dependent on need as determined by Cornell and the program, within state guidelines. The maximum HEOP award is currently $1,500.

Educational Opportunity Program (EOP) grants are New York State grants awarded by Cornell to educationally disadvantaged students from low-income families who, with special counseling and other supportive services from the University, show promise of success at Cornell. Applicants must be (1) New York State residents; (2) attending the College of Agriculture and Life Sciences or Human Ecology or the School of Industrial and Labor Relations; (3) academically disadvantaged and economically disadvantaged according to guidelines approved by the Board of Regents and the director of the budget. The amount of financial assistance and other support provided to EOP participants is dependent on need as determined by Cornell and the program, within the state guidelines. The maximum EOP award is currently $2,200.

Supplemental Educational Opportunity Grants (SEOG) are federal grants awarded by Cornell to undergraduate students who are U.S. citizens or permanent residents demonstrating exceptional financial need who would be unable to attend without the grant. The grants must be at least $200 and not more than $1,500 per year, and they may not total more than $4,000 in four years, except for students in five-year programs who are eligible to receive up to $5,000 total. Students must remain in good academic standing and must be making satisfactory progress to continue receiving the grant, and meet all other conditions outlined in the Financial Aid Eligibility section.

Tuition waivers are offered on a limited basis by the College of Human Ecology and the School of Industrial and Labor Relations to non-New York State residents. Recipients are chosen from needy financial aid applicants by the College Selection Committee. The standard Cornell financial aid application is required. Human Ecology offers up to eight waivers valued at actual tuition and Industrial and Labor Relations two waivers valued at $1,550. More specific information is available from Barbara Morse, Chairperson, Division of Academic Services, College of Human Ecology, telephone 607/256-4549; and Brenda Bricker, Associate Director of Resident Instruction, School of Industrial and Labor Relations, telephone 607/256-6221.

Prizes are available on a limited basis to undergraduate students. They generally are not based on financial need and are the result of direct competition. A booklet, *Prize Competitions,* which describes all regularily established

prizes, may be obtained from Mrs. Jean Morehouse, Office of the Dean of Faculty, 315 Day Hall, telephone 607/256-4843.

Employment: see Employment at Cornell.

Loans: see University Loan Programs below.

University Loan Programs

Several loan programs are available. You are not required to accept a loan in order to receive other types of aid. Students should discuss the possibility of replacing part of the value of a loan with a job with the coordinator of student employment in the Office of Financial Aid to determine whether employment is available.

Students accepting student loans are committing themselves to a serious legal and moral obligation: loans must be repaid. Repayment may take as long as ten years after leaving Cornell University. Students are urged to consider their ability to repay a loan, their future credit rating, and their potential indebtedness before accepting a loan. The staff of the Office of Financial Aid is willing to discuss the implications of loans on students' future financial situation.

Preloan interviews

All students who borrow a Cornell loan (NDSL, Cornell FISL, or University) for the first time are required to attend an interview during the first semester that the loan is obtained; the loan will not be dispersed until after the interview. Important information concerning repayment and deferment and cancellation provisions will be discussed. Further information about interview attendance will be provided with loan papers. Failure to attend will result in the cancellation of the loan.

Cornell Loans

National Direct Student Loans (NDSL) are loans offered to full-time students who are U.S. citizens or permanent residents. Students who have completed less than two years of a program leading to a bachelor's degree may borrow up to $2,500; students who have completed two years towards a bachelor's degree may borrow up to $5,000 to include any amount borrowed through a NDSL for the first two years of study; $10,000 is the maximum for graduate study, to include any amount borrowed as an undergraduate. They are intended for students who have great financial need. At Cornell initial NDSL's are generally awarded to students whose gross family income is below $15,000 who demonstrate financial need and meet all other criteria as described in the Financial Aid Eligibility Section. No interest is charged on this loan while the student maintains at least half-time status, but 3 percent interest is charged beginning nine months after he or she leaves school. The student has up to ten years to repay the loan after leaving school. Deferment of repayment is allowed for additional graduate work and for military, Peace Corps, and VISTA service. Up to 100 percent of the loan may be cancelled for a student who becomes a special education teacher or a teacher in an economically and culturally deprived area. The promissory note contains more detailed information.

Once offered, NDSL loan money will not be credited to the student's account until the promissory note is executed and returned to the Office of Financial Aid and, if a first-time NDSL borrower, a preloan interview has been attended. Freshman, transfer, and professional school students will receive their promissory notes during the summer; the notes for upperclass and graduate students are enclosed with their award announcements. Normally the loan will be divided and credited equally to the fall and spring portions of the University billing statement.

Cornell Federally Insured Student Loans (FISL) are loans assigned to needy students to whom the office has been unable to offer a National Direct Student Loan and who live in states that do not have a state loan program and are unable to obtain an FISL loan through a lender in their state. Lenders may include banks, savings and loans associations, credit unions, and insurance companies. Federal regulation stipulates that Cornell and other univeristy lenders cannot offer an FISL unless the student can document that he or she has been rejected for a loan by at least one lender. A letter from a lender or a notarized statement from the student is satisfactory documentation; it should be forwarded to the Cornell Office of Financial Aid. Continuing students who have previous Cornell FISL loans may continue to receive these without a rejection letter.

Undergraduates may generally borrow up to $2,500 a year but may not exceed $7,500 for completion of the undergraduate degree. Graduate students may borrow $5,000 a year but may not exceed $15,000, including any undergraduate borrowing, Loans carry an annual interest rate of 7 percent; however, no interest is charged while the student is enrolled at least half-time at Cornell and during a nine month period after leaving Cornell. An insurance premium of one-quarter of one percent will be collected at the time of disbursement. After nine months, borrowers will be required to begin repayment of both principal and interest and will have a maximum of ten years after leaving school in which to repay the loan. Deferment of repayment may be permitted for additional graduate work and military, Peace Corps, and VISTA service.

Upon receipt of notification from the student of inability to obtain a loan, a loan application and promissory note will be sent. The loan applications and promissory notes for upperclass students who have received prior FISL loans are enclosed with the award announcements. A check will be issued to each student at the beginning of each semester after the completed application has been approved by the U.S. Office of Education and first-time borrowers have attended the preloan interview. Further instructions will be included with the loan application.

University loans are generally awarded to students not eligible for any other loan program. Interest is 7 percent annually and begins immediately upon graduation or withdrawal from Cornell; principal payments begin in the fourth month at a minimum of $30 per month. Deferment of principal payments is possible if the student returns to school on a full-time basis; however, interest continues to accrue and is billed annually.

Emergency short term loans at no interest are available to students who experience a delay in receiving outside awards or an emergency need. Up to $300 may be borrowed and must generally be repaid within ninety days or the end of the term, whichever occurs first. Loans are available through the University Office of Financial Aid, 203 Day Hall or the Colleges of Agriculture and Life Sciences and Human Ecology, the Schools of Industrial and Labor Relations and Hotel Administration, the Law School, and the College of Veterinary Medicine.

Typical Loan Repayment Schedules The following tables represent typical repayment schedules for student borrowers of Cornell loans. Borrowers should consult the promissory note carefully to ensure that they fully understand the terms of the loan before the loan is accepted, and any questions should be addressed to the Office of Financial Aid. NDSL and FISL payments are made every month.

Monthly NDSL Payments

Amount Borrowed	*Amount of Payment*	*Number of Payments*
$ 1,000	$30.00	35
2,000	30.00	74
3,000	30.00	120
4,000	39.00	120
5,000	49.00	120
6,000	59.00	120
7,000	69.00	120
8,000	79.00	120
9,000	89.00	120
10,000	99.00	120

Monthly FISL Payments

Amount Borrowed	*Amount of Payments*	*Number of Payments*
$ 1,000	$ 30.00	38
2,000	30.00	85
3,000	35.00	120
4,000	46.50	120
5,000	58.25	120
6,000	70.00	120
7,000	81.50	120
8,000	93.50	120
9,000	104.50	120
10,000	116.50	120
11,000	128.46	120
12,000	140.13	120
13,000	152.70	120
14,000	165.43	120
15,000	178.31	120

Loan Exit Interviews Federal regulations and University policy require students who have taken a National Direct Student Loan, a Federally Insured Student Loan, or a University Loan, from Cornell University, to attend a loan interview before graduating or withdrawing from the University. Important information concerning repayment schedules and deferment and cancellation provisions will be discussed. Students must attend and should contact the loan office in 260 Day Hall to arrange for the interview immediately before leaving the University. Failure to have exit interviews or to make appropriate arrangements with the bursar's office regarding loans will result in the withholding of diplomas and transcripts until the bursar's office is satisfied that the student fully understands the extent of any loan obligations after graduation.

Employment at Cornell

Many job opportunities, on and off campus, are available to Cornell students, regardless of financial need. Employment, in moderation, can be beneficial to a student's educational experience, and earnings can often reduce or eliminate the necessity to borrow.

College Work Study Program

Cornell participates in the federally funded College Work Study (CWS) Program. Students must be U.S. citizens or permanent residents and meet all other requirements included in the Financial Aid Eligibility section. Job placement extends to most areas of University activity. Every effort is made to refer students to positions compatible with their interests and qualifications, although such opportunities are not always available. Pay rates range from $2.65 ($2.90 as of 1/1/79) to $4.00 per hour, depending on the skills required and employment experience. Students are paid once every two weeks for hours worked. Graduate students may not work more than twenty hours a week and retain full-time student status.

Once students have earned the amount for which they are eligible, they will be terminated from the program and will be unable to continue College Work Study employment or other University employment without clearance from the Office of Financial Aid. Federal regulations prevent recipients of federal aid programs, i.e., CWS, NDSL, SEOG, from obtaining campus job earnings that, when combined with other aid resources, would exceed their financial need as outlined on the award letter.

Students are not required to accept a job offer in order to receive other types of aid. If students want to replace all or part of the value of the job offered with a loan, they must write to or make an appointment with a financial aid counselor to discuss this option. Substitution of a loan for a job assignment can occur only if loan funds are available.

Other Employment Opportunities

Job opportunities are also available to those not participating in the work-study program. Information is available from the Office of Financial Aid, 203 Day Hall, or directly from employers. Hotel students should contact the Hotel School Financial Aid Office for addditional information on employment opportunities. Federal regulations and University policies require students receiving financial assistance from Cornell to secure a clearance from the Office of Financial Aid before accepting on- or off-campus jobs.

Federal Aid Programs

Several grant, benefit, and loan programs are available to undergraduate and graduate students by direct application to the federal government. Federal programs to which application is made through Cornell University have been described in University aid program sections.

Basic Educational Opportunity Grants (BEOG)

Application Procedures Applications and other materials are available through the Cornell Office of Financial Aid. Students may also apply for BEOG by filing a Financial Aid Form (FAF) or a Family Financial Statement (FFA).

The completed application should be submitted for processing according to the directions included on it. A

calculated Student Eligibility Report (SER) will be sent to the applicant. The applicant's award is then determined by the financial aid officer at the postsecondary institution attended. Upon enrollment and submission of an SER to the Cornell Office of Financial Aid, funds will be credited to the student's institutional account.

Method of Selection of Recipients and Allocation of Awards The Basic Educational Opportunity Grant Program is an entitlement program. Scholastic accomplishment has no bearing on eligibility. The applicant must be enrolled as an undergraduate student on at least a half-time basis in an approved postsecondary institution and must need financial assistance to continue his or her education.

Financial need is determined by a formula applied to all applicants and the student eligibility index is calculated by this formula.

Awards are usually paid for up to four years of study. If the student is enrolled in a program that requires five years of study for a first degree, or if he or she is required to complete noncredit remedial courses to prepare for degree-credit enrollment, a fifth year award may be paid.

Copies of the booklets *Determination of Basic Grant Eligibility Index in Academic Year 1978–79* and *1978–79 Student Guide: Basic Grants,* and a list of approved eligible postsecondary institutions may be obtained by writing to BEOG, P. O. Box 84, Washington, D.C. 20044.

Award Schedule Currently awards range from $176 to $1,600, but may not exceed one-half the total cost of attendance. The amount of the award will be affected by costs of attendance and enrollment status. The BEOG award does not duplicate state awards.

Rights and Responsibilities of Recipients Students must continue to make satisfactory academic progress in the program in which enrolled. Students must not owe any refunds on Basic Grant or other awards or be in default on repayment of any student loan.

Before receiving payment, the student must sign an affidavit, available from the Cornell Office of Financial Aid, that all money received will be used for the cost of attendance only.

Guaranteed Student Loan Program

Application Procedures The student should obtain a loan application from a participating lending institution (bank, credit union, etc.) in his or her area of permanent residence. The completed application is presented to the financial aid officer at the postsecondary institution attended and is then routed to the lending institution and the appropriate federal government agency.

A counseling session or an interview, or both, may be required. When the loan is approved, a promissory note is signed by the student. Funds may not be disbursed earlier than August 1 for the school year beginning in the fall.

Selection of Recipients and Allocation of Awards To be eligible for a guaranteed loan a student must be 1) a U.S. citizen or permanent resident and 2) enrolled in or admitted as a matriculated student at least half time at an approved college, university, or other postsecondary institution.

Loan Schedule An undergraduate may borrow up to $2,500 per year, up to a total of $7,500. A graduate student may borrow up to $5,000 per year, up to a combined total of $15,000 including any loans for undergraduate study.

A student's eligibility to receive interest benefits is based on adjusted annual family income* at the time the loan is guaranteed. Students whose adjusted family income is less than $25,000 are eligible for a full interest subsidy during the time in school and for a nine-month period after leaving school before repayment must begin. An annual insurance premium of 1 percent of the loan amount is payable in full at the time the check is issued.

Rights and Responsibilities of Recipients Students may borrow at a low interest rate (currently 7 percent) with no repayment as long as they remain enrolled at least half-time, and for nine months after they cease to be at least half-time students. Payment of principal may be deferred during full-time study under a graduate fellowship program approved by the U.S. commissioner of education, during up to three years of active U.S. armed forces service, during up to three years as a full-time Peace Corps or VISTA or similar national program volunteer, or during up to twelve months of unsuccessful search for full-time employment.

Adjusted family income	*Annual rate of interest and fee*	*Interest paid by student while in school and during grace period*	*Interest paid by N.Y.S. in school and during grace period*	*Insurance fee paid by student in school and during grace period*	*Annual rate of interest during repayment*
$0–$25,000	8%	0%	7%	1%	7%
$25,000–$30,000**	8%	3%	4%	1%	7%
$30,000 and over**	8%	7%	0%	1%	7%

*Gross family income less 10 percent, less dollar value of deductions claimed, on most recent federal income tax return.

**A student whose adjusted family income is $25,000 or over may qualify for full interest subsidy based on results of a needs analysis conducted by an official of the institution attended. This category of partial subsidy is available through the New York State loan program only.

If a student applies for an additional loan, application must be made to the original lending institution.

Four months after ceasing to be at least a half-time student, the borrower must make formal arrangements with the lending institution to begin repayment. The following regulations apply:

1) The minimum monthly payment will be $30 plus interest. Under unusual circumstances the lender may permit reduced payments.
2) The maximum repayment period is ten years.
3) The maximum period of a loan from date of the original note may not exceed fifteen years, excluding authorized deferments of payments.
4) Repayment in whole or part may be made at any time without penalty.

United States Bureau of Indian Affairs Aid to Native Americans

Higher Education Assistance Program

Application Procedures Application forms may be obtained from the Bureau of Indian Affairs Office. An application is necessary for each year of study. An official needs analysis from the college financial aid office is also required each year. Each first-time applicant must obtain tribal enrollment certification from the bureau agency or tribe which records enrollment for the tribe.

Selection of Recipients and Allocation of Awards To be eligible, the applicant must 1) be at least one-fourth American Indian, Eskimo, or Aleut; 2) be an enrolled member of tribe, band, or group recognized by the Bureau of Indian Affairs; 3) be enrolled in or accepted for enrollment in an approved college or university, pursuing at least a four-year degree; and 4) have financial need.

Social Security Payments to Children of Deceased or Disabled Parents

Application Procedures Application may be made at any social security office. Applicants should present the social security card, if one has been issued, and provide the following information: name and address of the institution, dates of past attendance, student ID number if any, number of credit hours carried; and whether full- or part-time status planned for next academic period.

Selection of Recipients and Allocation of Awards The applicant must be 1) single and between eighteen and twenty two years of age; 2) financially dependent and have a deceased, disabled, or retired parent who worked long enough to qualify for social security; and 3) enrolled in a postsecondary institution (including trade and vocational schools) as a full-time undergraduate.

Award Schedule The amount of social security benefits may be affected by earnings if these are greater than $3,000 per year, and by earnings of a parent. Checks may continue until the end of the academic period in which the student becomes twenty two.

Rights and Responsibilities of Recipients Applicants already receiving benefits will be notified by the Social Security Administration several months before turning eighteen, about what must be done upon becoming a full-time postsecondary student so that benefits will continue.

Applicants who become eligible for benefits after reaching eighteen, by the death, disability, or retirment of a parent, must apply for benefits upon beginning full-time study.

Eligible applicants who apply late may receive back payments for up to twelve months.

State Aid Programs

Several grant, benefit, and loan programs are available to undergraduate and graduate students by direct application to the state government. State programs to which application is made through Cornell University have been described in University aid program sections.

Tuition Assistance Program (TAP)

Application Procedures Applicants must apply annually to the New York State Higher Education Services Corporation (HESC), Tower Building, Empire State Plaza, Albany, New York 12255. The application deadline for the 1978–79 academic year is March 31, 1979. Application forms will be mailed, beginning in April 1978, to all: 1) students who received a TAP grant or Regents Scholarship award in 1977–78; 2) high school seniors who applied for a 1978–79 Regents Scholarship; and 3) approved postsecondary institutions and high schools in New York State.

Before submitting the application, the applicant should review it with the high school counselor or college financial aid officer.

The Higher Education Services Corporation determines the applicant's eligibility and mails an award certificate directly to the applicant indicating the amount of the grant. The applicant presents the institutional copy of the certificate at the time of payment of tuition. The postsecondary institution may defer payment until receipt of the award certificate.

Selection of Recipients and Allocation of Awards Tuition Assistance Program is an entitlement program. There is neither a qualifying examination nor a limited number of awards. The applicant must 1) be a New York State resident and U.S. citizen or permanent resident; 2) be enrolled full time and matriculated at an approved New York State postsecondary institution; 3) have, if dependent, a family net taxable income below $20,001, or if independent and single with no tax dependents, a net taxable income below $5,667; and 4) be charged a tuition of at least $200 per year.

The current definition of independent status follows. (Note: Independent status under the state definition does not necessarily ensure independent status for federal aid programs.)

1) 35 years of age or older on July 1, 1978; or
2) 22 years of age or older on July 1, 1978 and not:
   a) resident in any house, apartment, or building owned or leased by parents for more than two consecutive weeks in calendar years 1977, 1978, 1979,
   b) claimed as a dependent by parents on their federal and state income tax returns for 1977, 1978, 1979,
   c) recipient of gifts, loans, or other financial assistance in excess of $600 from parents in calendar years 1977, 1978, 1979; or
3) under 22 years of age on July 1, 1978 and meeting all other requirements of 2) above and, in addition, able to meet at least one of the following requirements:

a) both parents deceased, disabled, or incompetent,
b) receiving public assistance other than Aid to Dependent Children (ADC) or food stamps,
c) ward of a court,
d) unable to ascertain parents' whereabouts,
e) unable, due to an adverse family situation, to submit parents' income.

Undergraduate students may generally receive TAP awards for four years of study. Students enrolled in approved five-year programs or in a state-sponsored opportunity program may recieve undergraduate awards for five years. Graduate students may receive awards for four years. No student (including opportunity students) may receive awards for more than a total of eight years of undergraduate and graduate study.

Award Schedule TAP awards are scaled according to level of study, tuition charge, and net taxable income. The income measure is the family's (or independent student's) net taxable income from the preceding tax year plus certain nontaxable income, and (for dependent students) support from divorced or separated parents. This income is further adjusted to reflect other family members enrolled full time in postsecondary study. Award schedules in effect are shown in the following table and are based on the expected payment schedules for the 1978–79 academic year.

Regents College Scholarships

Application Procedures Applicants may obtain information and application forms from the high school and file them with the high school principal.

Selection of Recipients and Allocation of Awards Regents College Scholarships are awarded competitively for full-time postsecondary study in New York State in 1) an approved degree, certificate or diploma program offered by a college or other degree granting institution; 2) a hospital school program leading to license or certification; and 3) a two-year program in a registered business school not authorized to grant a degree.

Basis of the award is the Scholastic Achievement Test (SAT) or American College Testing Program Assessment (ACT) score. A registration fee, currently $7.25, is charged for either of these examinations. A limited number of fee waivers are available for economically disadvantaged applicants and may be applied for. These examinations may be taken more than once, with the highest score used as the basis for the award.

There are 18,843 scholarships allocated by county. Additional scholarships are allocated to ensure that each approved high school has at least one scholarship for each forty graduates of the previous year.

Expected Payment Schedule—Tuition Assistance Program (TAP)
1978–79 Academic Year

	Undergraduate		*Graduate***	
Income (Net Taxable Balance)	*Schedule C Dependent or Married*	*Schedule E* Independent and Single*	*Schedule B Dependent or Married*	*Schedule D* Independent and Single*
$0–1,000	$1,800	$1,800	$600	$600
2,000	1,800	1,500	600	350
3,000	1,785	1,300	533	100
4,000	1,725	900	466	100
5,000	1,665	600	400	100
6,000	1,595	0	333	0
7,000	1,525	0	266	0
8,000	1,455	0	200	0
9,000	1,375	0	133	0
10,000	1,295	0	100	0
11,000	1,215	0	100	0
12,000	1,115	0	100	0
13,000	1,015	0	100	0
14,000	915	0	100	0
15,000	795	0	100	0
16,000	675	0	100	0
17,000	555	0	100	0
18,000	415	0	100	0
19,000	375	0	100	0
20,000	200	0	100	0
Over 20,000	0	0	0	0

* Independent students must have a net taxable balance income below $5,667 to receive an award.

** Awards for all annual tuitons greater than $600.

Note: TAP awards are reduced by $200 per year for Schedule C and Schedule E students who have received four or more payments.

The applicant must 1) have been a legal resident of New York State for at least one year immediately preceding the first term for which application is made; 2) either graduate from high school by the end of the school year in which the examination was taken or be accepted as a full-time matriculated student at a college or other approved school located in New York State by September of that year; and 3) not previously have competed for a Regents Scholarship. Requirements two and three may be waived for reasons satisfactory to the commissioner of education.

Award Schedule The award is $250 per year, for up to five years, depending on the normal length of the program in which the recipient is enrolled.

Regents Awards for Children of Deceased or Disabled Veterans

Application Procedures A special application, obtainable from the high school principal or counselor, must be filed with the New York Sate Higher Education Services Corporation (HESC), Tower Building, Empire State Plaza, Albany, New York 12255. Documentary evidence to establish eligibility is required with the appliction. Consult a high school counselor for assistance.

Selection of Recipients and Allocation of Awards The applicant must be 1) the child of a veteran who died, or who has a current disability of 50 percent or more or who had such disability at the time of death, resulting from U.S. military service during one of the following periods: April 16, 1917–November 11, 1918, December 7, 1941–December 31, 1946, June 25, 1950–July 27, 1953, October 1, 1961–March 29, 1973, and; 2) a legal resident of New York State. Legal residence in New York State of the parent at the time of entry into military service, or, if the parent died as the result of military service, at the time of death is also required.

Regents awards to children of deceased or disabled veterans are independent of family income or tuition charge and are in addition to other grants or awards.

Award Schedule The amount of the award is $450 per year, for up to five years of full-time study in a college or in a hospital nursing school in New York State.

State Aid to Native Americans

Application Procedures Application forms may be obtained from the Native American Education Unit, New York State Education Department, Albany, New York 12234. The completed application form should be forwarded by the applicant to the Native American Education Unit along with the following materials: 1) official transcript of high school record or photostat of General Equivalency Diploma; 2) letter(s) of recommendation from one or more leaders in the community attesting to personality and character; 3) personal letter setting forth clearly and in detail educational plans and desires; 4) signature of the parents of minor applicants approving education plans; and 5) official tribal certification form.

Selection of Recipients and Allocation of Awards The applicant must be 1) a member of one of the Native American tribes located on reservations within New York State; 2) have graduated from an approved high school, or have earned a General Equivalency Diploma, or be enrolled in a program in an approved postsecondary institution leading to degree-credit status and the General Equivalency Diploma; and 3) enrolled in an approved postsecondary institution in New York State.

State Aid to Native Americans is an entitlement program. There is neither a qualifying examination nor a limited number of awards.

Award Schedule The award is $1,100 per year for a maximum of four years of full-time study at a minimum of twelve credit hours per semester. Students registered for less than this number will be funded at approximately $46 per credit hour.

Rights and Responsibilities of Recipients Students are responsible for notifying the Native American Education Unit in writing of any change in student status or program or institutional enrollment.

Work Incentive Program (WIN)

Application Procedures Application is through the New York State Department of Social Services, which determines eligibility for Aid to Dependent Children (ADC). ADC recipients may be eligible for WIN.

Selection of Recipients and Allocation of Awards In order to place eligible applicants in permanent unsubsidized employment, applicants may be registered with the New York State Department of Labor for institutional training. Training must be related to jobs which are, or are likely to become, available in the WIN project area. WIN registrants may be placed in training programs which do not exceed one year, e.g., to be considered for the program, a registrant wishing to complete a bachelor's degree must have completed three years toward this goal and be enrolled in a vocationally oriented curriculum.

Award Schedule Tuition and books are paid for by WIN. Registrants are paid $2 per day for training-related expenses, plus an incentive allowance of up to $30 a month which is not included in ADC assistance payment computations. Child care costs may also be paid.

Rights and Responsibilities of Recipients Each participant in the institutional training component of the WIN program has the responsibility of attending training, doing the best he or she can to complete training and to obtain regular unsubsidized employment.

For further information concerning financial aid programs, please consult the following offices:

Undergraduates: Office of Financial Aid, 203 Day Hall, Ithaca, New York 14853 (607/256-5145)
International students: International Student Office, 200 Barnes Hall, Ithaca, New York 14853 (607/256-5243)

Statement of Student Rights and Responsibilities

1) Students have the right to be informed of and to apply for all financial aid programs for which they are eligible and the responsibility to apply by program deadlines and to acquaint themselves with the application procedure.
2) Students have the right to know how financial need and award packages will be determined and to request a review of the financial aid package should circumstances change to negatively effect the family's

ability to meet costs of attendance and the responsibility to notify the University should new resources become available to the student which were not originally considered.

3) Students who borrow from the University have a right to full disclosure of the terms and provisions of loan programs, including typical repayment schedules and the responsibility to attend preloan and exit interviews before borrowing and leaving the University. They must repay loans on a timely basis and keep the University informed of their current address.

4) Students have the right to be informed of financial aid policies and have the responsibility to be aware of all published financial aid policies and to comply with these policies.

5) Students have the responsibility to submit accurate information on all University documents relating to the financial aid application process.

The Students

Cornell University has a student body of about 16,340 in its eleven schools and colleges at Ithaca. Over one-quarter of the students are engaged in graduate and professional study. The student body is diverse in interests and background with 58 percent of the undergraduates from New York State, 35.5 percent from the remaining fifty states, and 6.5 percent from over ninety foreign countries. See charts on page 22 for enrollment summary and geographical distribution.

About 38 percent of the undergraduate men live in rooms, apartments, or with their families, 23 percent in fraternities and associations, and 39 percent in University residence halls. Nine percent of the undergraduate women live in sororities, cooperatives, and associations; approximately 52 percent live in University residence halls; and 39 percent in off-campus apartments or with their families. Over 40 percent of the undergraduate men belong to fraternities; about 12 percent of the women are sorority members. Graduate students live in apartments, rooming houses, the Sage Gradute Center, Cascadilla Hall, and Hughes Hall.

Retention and Graduation of Undergraduates

The table on page 23 follows the freshman class entering in the fall of 1972 through five years until the beginning of the sixth year (fall 1977). It is important to go beyond the normal four years when most students would have received baccalaureate degrees to account for those in longer programs, especially the five-year program in architecture, for students who left the University for short periods but returned to complete degrees, and for others who may have "lost time" by changing from one program to another within the University.

By the fall of 1977, 79.5 percent of the students that entered endowed undergraduate units in 1972 (Architecture, Art, and Planning; Arts and Sciences; Engineering; and Hotel Administration) had either graduated or were still enrolled. In the statutory units (Agriculture and Life Sciences; Human Ecology; and Industrial and Labor Relations) 82.7 percent had graduated or were still working toward a Cornell degree.

Student Responsibilities

The student identification card is furnished by the University, issued by the Office of the Registrar and validated at the time of University registration. It remains the property of the University and must be returned to the Registrar's Office, 222 Day Hall, when the student is no longer enrolled (See Student Identification Card in the *Policy Notebook for Students, Faculty and Staff* for further information.)

In extracurricular affairs and conduct, Cornell students have today, as they had in the University's infancy, maximum freedom to govern themselves and responsibility for the use they make of this freedom. The student, both as an individual and as a member of any student organization, however, is responsible for adhering to all applicable regulations set forth in the *Policy Notebook for Students, Faculty and Staff.* This booklet is given to every new student and extra copies are available in the Office of the Dean of Students. In addition to the Campus Code of Conduct, the *Policy Notebook* contains a Statement of Student Rights, a Code of Academic Integrity, the University policy on access to and release of student records, information on the University judicial system, library and motor vehicle regulations, and other policies and regulations.

Students are responsible for meeting all requirements for the courses in which they are enrolled as laid down by the faculty members teaching the courses. It is also the student's responsibility to be aware of the specific major, degree, distribution, college, and graduation requirements necessary to complete his or her chosen program of studies. Students should know how far they have progressed in meeting those requirements at every stage of their academic career.

Student Records

The University policy on access to and release of student records conforms to public law, Family Educational and Privacy Act of 1974. See pages 42–44 of the *Policy Notebook for Students, Faculty and Staff* for details of University policy.

Enrollment, Fall Term, 1977	First Year			Second Year			Third Year			Fourth Year			Fifth Year		
	M	W	T	M	W	T	M	W	T	M	W	T	M	W	T
Endowed															
Architecture, Art, and Planning	40	45	85	70	41	111	54	46	100	56	32	88	34	9	43
Arts and Sciences	514	469	983	482	437	919	513	448	961	453	424	877	1		1
Engineering	543	77	620	537	76	613	521	70	591	457	62	519			
Hotel Administration	112	19	131	99	34	133	158	46	204	114	45	159			
Unclassified	2	—	2	50	14	64	26	20	46	4	1	5			
Total endowed undergraduate	1,211	610	1,821	1,238	602	1,840	1,272	630	1,902	1,084	564	1,648	35	9	44
Statutory															
Agriculture and Life Sciences	308	271	579	297	277	574	522	352	874	526	364	890	3		3
Human Ecology	27	226	253	25	217	242	39	289	328	36	275	311		2	2
Industrial and Labor Relations	85	44	129	73	53	126	112	65	177	114	40	154	1		1
Total statutory undergraduate	420	541	961	395	547	942	673	706	1,379	676	679	1,355	4	2	6
Total undergraduates	1,631	1,151	2,782	1,633	1,149	2,782	1,945	1,336	3,281	1,760	1,243	3,003	39	11	50

	Professional & Graduate			Special			Total		
	M	W	T	M	W	T	M	W	T
Endowed									
Architecture, Art, and Planning					2	2	254	175	429
Arts and Sciences				4	8	12	1,967	1,786	3,753
Engineering					1	1	2,058	286	2,344
Hotel Administration							483	144	627
Unclassified							82	35	117
Total endowed undergraduate				4	11	15	4,844	2,426	7,270
Statutory									
Agriculture and Life Sciences				16	10	26	1,672	1,274	2,946
Human Ecology					5	5	127	1,014	1,141
Industrial and Labor Relations				1	1	2	386	203	589
Total statutory undergraduate				17	16	33	2,185	2,491	4,676
Total undergraduates				21	27	48	7,029	4,917	11,946
Total professional schools	898	352	1,250	10	5	15	908	357	1,265
Total Graduate School	2,401	992	3,393				2,401	992	3,393
Total Ithaca	3,299	1,344	4,643	31	32	63	10,338	6,266	16,604

Regional Origin of Students

Metropolitan New York	4,624
Middle Atlantic	1,609
North Central	1,523
Northeast	2,062
Southeast	346
Upstate New York	4,404
West	707
Foreign and U.S. Possessions	1,065
Total	16,340*

*Figures are for fall 1977 and do not include extramural students, students registered *in absentia*, or students in the New York City divisions.

Retention and Graduation of Undergraduate Students
Cornell University
Freshmen Entering Fall 1972 (Class of 1976)

Endowed Colleges

Year	Percentage Graduated by End of Year	Year	Percentage Enrolling at Beginning of Year*	Total Percentage of Graduated and Enrolled
1	—	2	89.4%	89.4%
2	0.1%	3	80.0	80.1
3	3.6	4	77.0	80.6
4	68.2	5	11.8	80.0
5	77.7	6	1.7	79.4
Statutory Colleges				
1	—	2	90.1%	90.1%
2	0.3%	3	81.8	82.1
3	3.0	4	79.5	82.5
4	75.0	5	7.6	82.6
5	80.4	6	2.3	82.7

*Includes students who have withdrawn, taken leaves of absence, and who have returned.

Source: New York State Education Department Form 2.9.

Student Directory

The *Student Directory* is compiled from "Directory Information" as defined by the Family Rights and Privacy Act, and collected during University registration. Directory information may be released unless the student indicates at the time of registration that his or her information is to be excluded from release. In order to exercise this right students must inform the Office of the Univesity Registrar by filling out the appropriate form provided. The names of these students appear on the Exclusion List which is distributed to all appropriate University offices, and they are not listed in the *Student Directory*.

Orientation

An orientation program for *all* new students is held each fall, starting just before the beginning of classes. Orientation normally includes meetings with deans and college personnel of the various University divisions, lectures relating to academic programs, a convocation, living-unit discussion groups conducted by upperclass student orientation counselors, explanation of the wide range of extracurricular activities available, and a number of other events, all of which are designed to help the new student become acquainted with Cornell.

Orientation counselors are upperclass Cornellians who have volunteered their services and have been specially trained for the Orientation program. They plan social events, help new students get settled, aid with registration procedures, and help answer the many questions that occur to new students.

Social events include the Freshman Olympics and Cornell Night. Orientation activities are also scheduled for the parents of new students, including University events, family orientation workshops, the President's Convocation, and various programs conducted by the schools and colleges, the student unions, residence halls, Career Center, and Financial Aid Office. A complete schedule of all events for fall Orientation will be found in the Orientation newspaper, which is mailed during the summer to all new students or may be picked up upon arrival at Cornell.

An orientation program on a smaller scale is conducted for freshman students entering in January, with library tours and various meetings with college and office personnel as well as social activities in the residence halls and unions.

A Transfer Orientation Committee plans activities for the orientation of transfer students in January. Tours of the campus and libraries, meetings with transfer counselors and advisers, college convocations, and social activities are planned to help the transfer student meet other students and become familiar with the campus. Many transfers live in the Transfer Center located in Clara Dickson Hall. Another committee, Grad for Grads, plans orientation programs for new graduate students entering in January. All of these programs are organized and coordinated by the activities staff of the Office of the Dean of Students in 103 Barnes Hall.

Advanced Placement

Entering freshmen may qualify for advanced placement or credit or both on the recommendation of the appropriate departments of instruction and with the approval of their college or school.

Examinations sponsored by the College Entrance Examination Board (CEEB) Advanced Placement Program, the College Level Examination Program (CLEP), and the United States Armed Forces Institute are considered. Entering freshmen should have their scores sent to their college or school office. Placement and credit on the basis of these examinations will usually be determined during the summer, and students will be notified before course scheduling.

In certain subjects, students may also qualify for advanced placement or credit or both on the basis of department examinations given on campus during Orientation Week. A schedule of these examinations will appear in the Orientation newspaper, which will be mailed to entering students in late summer. For the departments that award advanced placement and credit on the basis of CEEB Advanced Placement, CLEP, or departmental examinations see the brochure, *Advanced Placement of Freshmen 1978–79,* available in the college offices listed below.

Students may reject advanced placement and repeat a course, thereby relinquishing the advanced credits.

Entering freshmen who have completed college courses for which they wish to receive credit toward their Cornell degree should send transcripts and course descriptions to their college or school office. The award of credit or placement for such courses is determined by the appropriate departments according to individual school and college guidelines. Because policy for using advanced placement credit varies according to each college's or school's professional and academic goals, students should consult their college or school office to determine how they may use such credit.

For further information about advanced placement contact the person in the appropriate Cornell college or school listed below.

College of Agriculture and Life Sciences
Donald C. Burgett
Cornell University
192 Roberts Hall

College of Architecture, Art, and Planning
M. Sophie Newhart
Cornell University
147 Sibley Hall

College of Arts and Sciences
Margaret C. Unsworth
Cornell University
134 Goldwin Smith Hall

College of Engineering
Jane H. Pirko
Cornell University
170 Olin Hall

School of Hotel Administration
Anita E. Miller
Cornell University
138 Statler Hall

College of Human Ecology
Joyce H. McAllister
Cornell University
146 Van Rensselaer Hall

School of Industrial and Labor Relations
Virginia W. Freeman
Cornell University
101 Ives Hall

Nonimmigrant foreign students should refer to pp. 25–27 below and the International Student Office, 200 Barnes Hall, for further information.

Language Placement Tests

Students who have had two or more years of language study in high school and do not have a recent College Entrance Examination Board (CEEB) score, must take a CEEB Achievement Test (or in the case of a language having no CEEB exam, must have a departmental interview). Language placement tests are given at the beginning of the fall and spring semesters.

Information about times and places to take these tests is available in the Orientation newspaper, the Office of Guidance and Testing, and the Department of Modern Languages and Linguistics in 203 Morrill Hall. Students must register for these tests at the Office of Guidance and Testing, 203 Barnes Hall and pay a $4 fee. For more information, see the section on Language Course Placement under the College of Arts and Sciences.

University Registration

University registration is the process by which the University registrar and colleges certify the eligibility of students to enroll in courses and purchase or use a variety of services available at the University, such as Cornell Card, Co-op Dining, libraries, special bus passes, and housing. University registration includes the issue of or validation of the student identification card and the collection of information needed for the student directory and state and federal reports. University registration is held on the dates stated in the University Calendar at a time and place announced well in advance of the beginning of each semester.

Registration "Holds"

A student whose records have not been cleared for any reason is not eligible to register or enroll in courses. Registration "holds" are placed on the records of students 1) with outstanding financial obligations to the University; 2) who have not fulfilled the health requirements; 3) who have been suspended; and 4) with unresolved matters with the Office of the Judicial Administrator.

Health Requirements

In order to register for the first time at the University, all new students must either have completed a health history form and had a recent physical examination, or they must make an appointment to do so at the time of registration by signing up at the Health Services desk.

Continuing students who have never completed these requirements will *not* be permitted to register until they have complied.

If students have not had a tetanus inoculation within the past six years, they will be required to get one, either from their own physician or from a Health Services physician. The fee for these inoculations is approximately $3.50 and the fee for a physical examination is approximately $25.00.

Foreign students should also refer to page 26 for additional health requirements applicable to them.

Late Registration

The final date for late registration coincides with the last day for adding courses (see University Calendar). Late registrants are assessed a $10 late processing charge. The University assumes no responsibility for lateness, and requests to waive the charge will be acted on favorably only when circumstances clearly beyond the student's control cause lateness or if the college has authorized such late registration.

The University does not permit after-the-fact registration in which persons attend classes and pass courses before seeking to register and receive official course credit.

The University reserves the right to require unauthorized nonregistered persons who attend classes or in other ways seek to exercise student privileges to leave the University premises. The University registrar will notify unauthorized persons as well as appropriate academic divisions and personnel.

Course Enrollment

Course enrollment for a given semester at Cornell is arranged at a midpoint during the previous semester. Students meet with their advisers during the specified two-week enrollment period to check that the courses they plan to take will ensure satisfactory progress towards a degree. Students complete an optical mark course enrollment form, obtain an adviser's signature on the form, then return the form to their college office. Forms are processed, and each student is sent a Course Confirmation Statement of the courses processed from the enrollment form. At the beginning of the term, each student is given a schedule showing sections and meeting times of the courses in which he or she is enrolled. See chart below for late course enrollment fees.

Course Add/Drop Period

Students may adjust their schedules during add/drop periods. Length of periods varies according to colleges. An optical mark form is completed by the student and signed by both the student's adviser and an appropriate representative of the department offering the course (an instructor, department staff member, or college registrar, depending on the college). The completed and signed form must be returned to the student's college office to be processed. (See University Calendar for add period and consult individual colleges for drop period.) See chart below for course add/drop/change fee.

Late Course Enrollment and Add/Drop/Change Fees

Academic Unit	*Late Course Enrollment Fee*	*Course Add/Drop Change Fee*
College of Agriculture and Life Sciences	No fee	No fee
College of Architecture, Art, and Planning	$10	$10*
College of Arts and Sciences	$10	$10*
College of Engineering	$10	No fee
School of Hotel Administration	No fee	No fee
College of Human Ecology	$10	$10*
School of Industrial and Labor Relations	No fee	No fee

*Consult the college office for special considerations and requirements.

Miscellaneous Services of the Registrar's Office

Notary Service Notary service is available in the Office of the University Registrar and the Financial Aid Office.

Enrollment Certification Students needing certification of enrollment, proof of degree received, or verification of information about current and former student status at the University may obtain these items at the University Registrar's Office, 222 Day Hall.

Name Changes Names may be changed on official University records by a special procedure implemented through the Office of the University Registrar, 222 Day Hall.

Special Academic Opportunities and Services

Foreign Students

International Student Office

The International Students Office, 200 Barnes Hall, telephone 607/256-5243, serves as an information center and provides arrival assistance, housing information, personal and academic advising and counseling, and generally serves in any way it can international students and campus groups.

Undergraduate Admissions Information

Nonimmigrant students (except Canadians) who attend schools not based on the U.S. system of education must submit a preliminary application and academic documents to the International Student Office to determine whether they meet the University's entrance requirements and standards. Deadlines for the preliminary application are:

Freshmen: December 15 for the September term;

Transfers: October 1 for the January term and February 15 for the September term.

All nonimmigrant students except Canadians and landed immigrants of Canada must file their application for admission with the International Student Office.

All documents and test scores must also be sent to this office. Foreign applicants may be subject to different test requirements from those outlined in the school and college announcements, so every foreign candidate should request a copy of the booklet, *Information for Undergraduate Foreign Applicants*. All questions concerning admission should be directed to the Undergraduate Admissions Section, International Student Office, Cornell University, 200 Barnes Hall, Ithaca, New York 14853. Canadian citizens, landed immigrants of Canada, and persons holding permanent resident visas should request application forms and information from the Office of Admissions, Cornell University, 410 Thurston Avenue, Ithaca, New York 14853.

Financial Aid

Eligibility and Availability

Financial aid resources for undergraduate nonimmigrant foreign students are severely limited at Cornell. Consequently, the competition for these awards is keen and only a small percentage of each entering class receives assistance. Students who receive financial aid are likely to be those with exceptional academic records, high test scores, strong potential for positive contributions to the Cornell community, and demonstrated financial need. Awards are generally a combination of scholarships, loan, and on-campus work.

Only freshmen and those candidates who will have completed an associate's degree in the U.S. at the time they enter Cornell are eligible to apply for financial aid. Assistance is not available to students transferring from bachelor's degree programs. If a student does not recieve financial aid upon entering Cornell, there is little chance of obtaining aid in the future, except in the event of a financial emergency. Should a student experience an unexpected financial problem after enrolling, he or she should immediately contact the International Student Office for assistance.

Students who receive financial aid from the University must reapply for aid each year. Application forms are available from the International Student Office. Only Canadians should pick up financial aid applications from the Office of Financial Aid in Day Hall.

Loan and Employment

Short-term emergency loans are available through the International Student Office for students who face unexpected financial crises. Under certain circumstances, long-term loans are also available. Nonimmigrant foreign students are not eligible for the work-study program administered by the Office of Financial Aid. Students who desire to work on campus should consult the International Student Office before accepting any employment. Due to visa restrictions, most foreign students are not permitted to accept any off-campus employment. Questions regarding permission to work should be referred to the International Student Office. *Note:* Foreign students in the Hotel School who wish to fulfill their practice credit requirement by working in the U.S. during vacations or the summer should contact Dean Beck's office.

Fees and Expenses

An estimate of expenses for a single student for the nine-month academic year follows. Additional funds are required for support of a spouse and children if they accompany the student. According to immigration regulations, the University must certify that a student has sufficient funds to cover expenses for the entire period of study at Cornell before issuing visa documents. Students who do not fulfill the financial certification requirements are not allowed to register. Estimates of expenses for foreign students are slightly higher than for domestic students since they must provide for their own living and travel expenses during the semester break. No allowance for international travel is given because the amounts needed vary greatly. Students also need extra funds (settling-in allowance) during the first year for the purchase of bedding and warm clothing; most students come from warmer climates.

Advanced Placement and Placement Exams

The University does not grant blanket credit for foreign education. External examinations, such as the GCE Advanced levels and International Baccalaureate Higher levels, have received advanced standing credit in the past. All credit is determined individually by subject according to the grade received on the exam. Students who think they may be eligible for advanced standing credit for foreign external examinations must bring certified copies or originals of the certificates, or a certified copy of the individual results notice slip with them when they arrive on campus. A syllabus of the subject is also almost always necessary. Questions about procedures may be referred to the Assistant Director for Foreign Student Admissions, International Student Office, Cornell University, 200 Barnes Hall, Ithaca, New York 14853.

Undergraduate foreign students will be notified in June by the International Student Office of the schedule for placement and advanced standing examinations given during Orientation Week. New students will receive a list of exams which they are urged to take during that period by their school or college foreign student adviser.

Health Requirement

Foreign students and their dependents must present a chest x-ray taken within twelve months of registration at Cornell, or undergo an x-ray upon arrival. Free chest x-ray service is available at the Gannett Clinic. Citizens of the following areas are exempt from this chest x-ray requirement: Europe, Japan, Australia, New Zealand, and Canada.

Estimate of Expenses for Undergraduate Foreign Students
Academic Year 1978–79 (September 1–May 30)

	Arts and Sciences, Engineering, Hotel	*Architecture*	*Agriculture, I&LR, Human Ecology*
Tuition	$4,800	$4,800	$3,350
Books and school supplies	240	390	240
Health and accident insurance* (for 12 months)	80	80	80
Living expenses (single student)	2,630	2,630	2,630
Room and board	(2,100)	(2,100)	(2,100)
Personal expenses (laundry, clothing, incidentals, recreation, local transportation)	(530)	(530)	(530)
Semester break travel allowance	100	100	100
Semester break living allowance	200	200	200
TOTAL	$8,050	$8,200	$6,600

An additional $220 is generally required for new students to purchase warm clothing and extra linens.

Additional Expenses

Summer break living expenses	$80 per week
Summer school tuition (Attendance is voluntary.)	$100 per credit hour, plus $5 per week general fees
Married student living expenses Includes $185 per month for spouse. Add $80 per month for each child.	$535 per month

*This is an approximate figure and is subject to change.

Registration

All entering nonimmigrant foreign students (including Canadians and landed immigrants of Canada) must secure clearance from the International Student Office before registration will be permitted.

Leaves of Absence, Withdrawals, Transfers, Credit Hour Reductions

Any nonimmigrant foreign student planning to take a leave of absence should check first with the International Student Office. Students taking a leave or withdrawing from the University normally cannot legally remain in the U.S. Students graduating or leaving the University should file a Notice of Departure with the International Student Office. Students intending to transfer to other universities should check the immigration regulations regarding transfer in the International Student Office.

Visa regulations also stipulate that students must carry at least twelve credit hours each term. Foreign students who are petitioning to drop their course load below twelve hours should contact the International Student Office to determine how such a decision will affect their visa status and financial aid.

Minority Education Services

COSEP Program

The COSEP (Committee on Special Educational Projects) Program was founded by Cornell University in 1963. Consistent with its mission as a land-grant institution and its founding philosophy, the COSEP Program extends equal opportunity to those minorities who traditionally have been excluded or underrepresented in higher education. COSEP provides admission opportunities for minority students who wish to enroll in one of the seven undergraduate units at Cornell University. The office also provides financial assistance to all students who apply for financial aid and are admitted and provides support services designed to help students needing assistance in academic, social, or personal matters.

The office seeks to ensure that each applicant admitted is provided with all the services in the degree program the student chooses to complete. It also encourages each student to acquire skills which may be reinvested in the development of his or her area. It is anticipated that through a spirit of cooperation and sincerity among all those interested in their education, students in the minority educational affairs program will experience changes in their lives while attending Cornell University.

The COSEP central staff is responsible for assessing, developing, and implementing programs that will meet student needs. The COSEP associate staff in each college advises, counsels, and encourages academic achievement in the student's particular field. Academic assistance and services are provided in the form of tutorial and instructional courses through the Learning Skills Center and other services at the University. Technical assistance to various departments is provided in an effort to evaluate and improve the learning skills of minority students. The nonacademic services include work-study, leadership training, development of organizational skills (with student groups), and assisting students in implementing programs. A general counseling referral service is also provided by the office. Students are strongly encouraged to participate in every aspect of the COSEP program.

Educational Opportunity Program (EOP)
Higher Educational Opportunity Program (HEOP)

In 1969 COSEP was expanded by the addition of the New York State EOP (Colleges of Agriculture and Life Sciences and Human Ecology and the School of Industrial and Labor Relations) and HEOP (Colleges of Architecture, Art, and Planning; Arts and Sciences; and Engineering and the School of Hotel Administration) programs. These programs provide those students who would not be admitted through regular admission selection an opportunity to attend Cornell University. Only New York State residents who are both academically and economically disadvantaged are eligible for participation. The State Programs Office is responsible for implementing programs and providing support services for program participants.

Opportunity program students are encouraged to use the services of the Learning Skills Center and the COSEP Program.

The Learning Skills Center

The Learning Skills Center promotes scholarship to help ensure graduation of minority students at Cornell. The LSC provides academic advising, preparatory instruction in core courses (biology, physics, English, chemistry, math), and tutorial and study sessions. The LSC has study hall accommodations and provides students access to typewriters, calculators, a reserve library, course notes, previous exams, and tapes. Academic advising, including help in specific areas of study, scheduling, or programming information, is provided by the LSC staff to all minority students. A summer orientation program is offered for incoming COSEP freshman and transfer students. Freshman and upperclass students are urged to take advantage of these services.

The COSEP director is part of the provost's administrative staff, an arrangement that allows for maximum involvement in University-wide academic affairs. The program is decentralized in seven undergraduate colleges where assistant deans, or equivalents, are responsible for college-based minority activities. These college programs and activities are coordinated with the central office.

The COSEP Program admits approximately 270 new students each year and has a retention rate of about 70 percent. Approximately 976 black, Hispanic, Asian, and American Indian students were enrolled in the program for the academic year 1977–78 and nearly 200 students graduated in the spring of 1978.

A *Minority Student Handbook* is available at the the COSEP office. For further information contact the Director of COSEP, Darwin Williams, or call 256-3841.

Veterans Education

The veterans representative in the Office of the University Registrar, 222 Day Hall, assists students entitled to educational benefits as veterans or as widows or children of deceased or totally disabled veterans. The Office of the Registrar processes certification of enrollment and attendance to the Veterans Administration so that educational alllowances will be paid.

Students entitled to veterans benefits should consult the veterans representative or the veterans affairs clerk in the Office of the University Registrar before submitting applications to the Veterans Administration. These students are given the written instructions which set forth requirements to be fulfilled before certification of enrollment can be made to the Veterans Administration and other information of general interest.

Summer Session

Cornell Summer Session provides some unique and unusually attractive opportunities for study and recreation for students who range in age from the high school senior to the senior citizen. With Ithaca weather at its best, summer study makes available the extensive academic and recreational facilities of the University and the Finger Lakes Region. Students may choose from a wide spectrum of courses which are scheduled during three-week, six-week, and eight-week sessions, as well as dozens of special programs of varied lengths. Admission is kept relatively open and simple. Classes meet daily, and because they are usually small, a close association between student and teacher is facilitated.

For more information consult the Division of Summer Session, 105 Day Hall, or call 256-4987.

Continuing Education

The Continuing Education Information Center at Cornell University provides information, counseling, and referral to men and women who have been out of school for several years and want to resume their education. Anyone who wants to take courses, begin an undergraduate or graduate degree program, or complete an unfinished degree, is welcome to use the services of the center. Currently registered Cornell students who have experienced an interruption in education are also encouraged to make use of the center's resources. The Continuing Education Information Center is located in the Dean of Students Office, 103 Barnes Hall, and its services are free. Most individuals who come to the center want to resume work towards a degree, but individuals who wish to take one or two courses for their own interest or advancement are usually referred to the Division of Extramural Courses.

Extramural Courses

The Division of Extramural Courses makes it possible for persons living within commuting distance of the University to take one or two courses per term in areas of their own interest. Persons may register for practically any course in the University for which they have the necessary prerequisites provided space is available after all degree candidates have been registered, and they obtain written permission from the instructor. Permission must be obtained in advance of registration on a form provided by the extramural division. Registration is limited to a maximum of two courses and eight credit hours. Tuition is at the rate of $115 per credit hour for 1978–79 which does not include fees for services available only to full-time Cornell students. Courses taken through the Division of Extramural Courses carry regular Cornell University credit that may be used for certification for employment and in meeting requirements for academic degrees. The division also offers an Official Visitor's Program that allows persons to attend classes in many divisions of the University on a

space available basis at a charge of $10 per credit hour. Visitors are required to obtain written permission of the instructor and may enroll only on a space available basis. In this program no credit is given and no record is kept of attendance or performance. For more specific information about both programs contact the extramural Office in 105 Day Hall.

Information Services

The Information and Referral Center assists students, faculty, staff, and visitors by distributing free literature, answering questions, and giving directions. The center responds to questions over the telephone, in the mail, and on a walk-in basis. Questions to which answers are not readily available will be researched by the center staff. The center aims to minimize confusion and to help students avoid the necessity of contacting several offices with their questions. The center is in Day Hall near the East Avenue entrance and is open Monday through Friday from 8 a.m. to 6 p.m., and Saturday and Sunday from 9 a.m. to 5 p.m. The telephone number is (607) 256-6200.

Campus tours originate from the Information and Referral Center Monday through Friday at 11:15 a.m. and 1:30 p.m.; Saturday at 11:15 a.m., and Sunday at 1 p.m. From November 1 through March 31 the weekday tours are given at 1:30 p.m. only.

In Willard Straight Hall there is an information desk known as the Straight Desk. It differs from the Information and Referral Center in that it does not have a library of free literature and does not conduct tours. It does, however, sell snacks, magazines, and newspapers. The Straight Desk is open from 8 a.m. to 10 p.m. Monday through Friday, 9 a.m. to 10 p.m. on Saturdays, and 10 a.m. to 9 p.m. on Sundays. The telephone number is (607) 256-3450.

Handicapped Services

As a university commited to the principle of equal opportunity, Cornell's academic and social resources must be fully available to all who are qualified, including persons with impairment of sight, hearing, mobility, or muscular coordination.

Significant steps toward making its facilities and services accessible to the handicapped are being taken by Cornell. Classes, libarary services, dining facilities, student residences, guest lectures, and employment opportunities are some of the settings and activities for which accessibility must be assured. Since Cornell desires to provide access in as integrated and natural a setting as possible, the emphasis is on bringing the student to the class rather than on bringing the class to the student. A campus-wide program to provide ramps, curb cuts, and remodeled restroom facilties where needed is underway. Special parking permits for the handicapped have been issued, and arrangements for accessible accommodations in residence hall facilities have been made for individual students.

Ruth W. Darling, special assistant to the provost in 308 Day Hall (256-5298), is the campus coordinator for matters concerning the handicapped. If you have any questions, you are urged to get in touch with her for discussion and, where appropriate, referral to the proper resource person.

Florence Berger, associate dean of students in 103 Barnes Hall (256-3608), is serving as the resource coordinator for handicapped students. Each school within Cornell University has designated a representative to assist handicapped students with such matters of academic concern as course scheduling, classroom changes,and special provisions for taking exams. Their names are listed in a brochure for handicapped students which may be obtained from the Office of the Dean of Students, 103 Barnes Hall.

Judicial System

The judicial administrator's office receives and investigates complaints brought by students, other members of the University, and offices on campus involving alleged violations of the Campus Code of Conduct or the Statement of Student Rights. The judicial administrator may also initiate investigations. If there is reasonable cause to believe that a violation has occurred, the judicial administrator files charges and reminds the defendant of the services of the judicial advisor. Personal details of complaints and judicial actions are considered qualified privileged information.

Many judicial cases are resolved by summary decision. In such decisions the judicial administrator proposes a fine or a remedy, or both, which the parties to the case choose to accept. Either the defendant or the judicial administrator may, however, decide instead to take the case to a formal hearing. A complainant who is dissatisfied with the judicial administrator's action in a complaint may appeal that action to the University Hearing Board, which then decides whether or not to refer the case to an adjudicatory hearing.

Judicial procedures and penalties, like the campus code, are legislated through the Campus Council. Questions about the judicial system should be directed to the Office of the Judicial Administrator, 431 Day Hall; hours are 9:00 a.m.–4:30 p.m., Monday through Friday. The *Policy Notebook for Students, Faculty and Staff,* available from the Office of the Dean of Students, details the principles and policies governing campus conduct. For further information consult the staff in the Office of the Dean of Students, 103 Barnes Hall.

A judicial advisor is available, without charge, to provide legal counseling and legal assistance to those accused of violating University rules and regulations, including academic integrity violations. The Office of the Judicial Advisor is not associated with the Cornell Legal Aid Clinic and is not equipped to handle legal problems arising outside the University context. The Office of the Judicial Advisor is located in B19 Day Hall, 256-6492. The hours of this office change each semester and are posted on the office door, along with telephone numbers where an advisor can be reached when the office is not open. Further information about the Office of the Judicial Advisor can be obtained from the Office of the Judicial Administrator.

The Legal Aid Clinic, located in 424 Hughes Hall, provides legal service in civil cases for students and residents of Tompkins County who cannot afford a lawyer. The clinic deals primarily with four types of cases: landlord/tenant disagreements, consumer and welfare problems, and family matters. Call 256-4196 for further details.

Ombudsman

The University Ombudsman's Office in 201 Barnes Hall, telephone 256-4321, hears and investigates complaints about the operation of the University, especially complaints of injustice and abuse of power. The office is independent of the University administration and all other groups on the campus; it reports only to the community. Any member of the Cornell community may make a complaint to the ombudsman's office and seek its assistance.

The function of the office does not take the place of existing grievance procedures but nonetheless stands ready to hear and investigate complaints at any time. The office does not have power to change or reverse decisions or to punish anyone. Its main purpose is the just and equitable resolution of conflicts in the University. In addition to hearing and investigating complaints, it may also investigate problems on its own initiative and report its findings and recommendations to appropriate people in the University.

Academic Support Services

The following section is intended to inform students of special support services available to help them achieve success in their academic careers. They are frequently of enormous help in solving special academic problems and students should not hesitate to make use of these services.

Academic Resources Center (ARC)

The Academic Resources Center (ARC), located in the lobby of Uris Library, is an information and referral center for academic support services and materials at Cornell. The center's files cover three areas: guidance and tutorial services, audiovisual equipment, and special libraries and collections.

Information on guidance and tutorial services includes lists of typists, tutors, translators, and editors as well as details on many academic services on campus.

The Academic Resources Center maintains an extensive file on the locations and availability of audiovisual equipment. Professors, students, or staff who need equipment for academic activities may call ARC and ask the center to make arrangements for an equipment loan or rental. Audiovisual requests should be made several days in advance.

ARC has also gathered information on many of the small specialized libraries and collections at Cornell. Some of these collections contain books and journals while others consist of specimens.

If an immediate response to an inquiry is not possible, ARC will contact sources throughout the University and Ithaca in order to satisfy the request.

The center is open Monday to Friday from 9 a.m. to 4 p.m. Call ARC at 256-4199 or visit the ARC desk in the lobby of Uris Library.

Career Development Center

The Career Development Center, located at 14 East Avenue across from the Statler, is part of the University counseling and advising network. The center, working in cooperation with the college offices, assists all Cornellians, from first-year students to alumni. Its purpose is threefold: to help people organize their personal resources in career planning and job hunting, to advise on graduate and professional study, and to offer access to current job markets. It provides information and advice on summer jobs, volunteer activities, internships, overseas study, travel, graduate and professional schools, fellowships for graduate study, minority opportunities, résumé writing, and job-hunting techniques.

The center's facilities, program, and activities include the following:

A library of over 15,000 items, one of the most extensive career libraries in the country, including information about job-hunting techniques, graduate study, summer and other short-term employment, and career opportunities. Two information specialists assist students in the use of this material.

"The Career Center News," a section that appears weekly in the *Cornell Daily Sun,* informs the campus of job interviews, application deadlines, and career programs.

Programs include speakers, panel discussions, and other events on such subjects as job hunting, graduate school admissions, fellowships and scholarships, and study and job opportunities abroad.

Employment Interview and Job Placement During October and November and again in February and March the Career Center, along with the schools and colleges, provides up to thirty interviewing rooms a day for the hundreds of employers who come to the campus each year to talk with Cornell graduates. The diversity of the University and the quality of the students bring most of the major employers of college graduates to the campus.

Placement Bulletins In addition to bulletins listing jobs, the center publishes and distributes to 3,000 employers a bimonthly bulletin listing the qualifications of students and alumni seeking employment.

Graduate School Recruiting Cornell students are heavily recruited by graduate schools. The Career Center arranges interviews with admissions directors from various graduate institutions, including the major law and graduate business schools.

Advising and Instruction Instruction is provided on job-hunting techniques and career planning through programs that include résumé critiques and a self-assessment workshop. The staff also advises students on individual problems related to graduate school admissions and fellowships.

Tests Current bulletins and applications for the Law School Admission Test, the Graduate Record Examination, civil service examinations, dental and medical school admissions tests, and other examinations are available at the center.

Opportunities in education Teachers and educational administrators may arrange to have dossiers of personal information and recommendations filed with the Educational Placement Office in the Center. For two dollars a set, copies can be sent to prospective employers upon request of either the candidate or the employer.

Minority programs In cooperation with the Minority Undergraduate Law Society, the Minority Business Students' Association, the Black Agriculturalists, and other

minority organizations, the center offers programs on many topics. Representatives from business, industry, government, school systems, and graduate and professional schools who are recruiting minority students make frequent visits to campus. The minorities' adviser at the center keeps students informed about specific careers in business and science in which minorities are currently underrepresented.

Volunteer opportunities Volunteers can work on campus, in Ithaca, and around the world, with VISTA, in summer camps for disabled children or adults, in work-project camps the world over, with church groups, or in summer schools for the disadvantaged. Such experience is often good background for teaching, social work, and the health professions. Some of these opportunities offer small remuneration, some provide room and board; others may actually require payment.

Internships A growing number of students obtain valuable career orientation and practical experience through internships. Many have found summer internships through the Cornell Internship Program (CIP), a student organization that works in cooperation with the Career Development Center, locating internships in business, government, and nonprofit organizations.

Guidance and Testing Center

This center, located at 203 Barnes Hall, offers counseling to Cornell students who desire help in defining their academic or vocational objectives and aids students in adjusting to the academic environment of the University. After a free initial interview to provide the counselor with relevant background information to help define the nature of the student's problem, the student may be encouraged to take a series of tests (aptitude, interest, personality, and achievement). The fee for this battery of tests is $30. The student will return in order to have the test results interpreted in follow-up counseling sessions. All counseling and test results are kept strictly confidential. Appointments should be made in advance, Monday through Friday between 8:00 a.m. and 4:30 p.m., by calling extension 6-5044.

Interfraternity Council Tutoring Services

The Interfraternity Council provides tutors without fee to any student who needs help with a course. Tutors skilled in math, chemistry, physics, biology, computer science, statistics, and other subjects are available. Special sessions are planned this year for chemistry and math. For more information call 256-5183 or stop in the council office at 17 Willard Straight Hall.

The Learning Skills Center

See Minority Education Programs.

Office of Learning and Teaching Services

This office coordinates learning and teaching service activities across the University, collects and disseminates information on teaching improvement, and facilitates teaching innovation. Areas of concern include learning skills and tutor services. The Office of Learning and Teaching Services is located in 375 Olin Hall, telephone 256-3413.

Reading and Study Skills Center

A part of the Office of Learning and Teaching Services, this center offers courses in speed reading and a variety of study skills. Special emphasis is placed on how to read texts, budget time, and prepare for exams. In addition to the minicourses, audio cassettes on these topics are maintained at the center, in the Listening Room of Uris Library, the Reserve Desk of Mann Library, Room C-111 of the College of Veterinary Medicine, and at the three student unions.

Writing Skills Workshop

The writing workshop is located in 302 Rockefeller Hall and aids students needing help with their writing skills. Students needing systematic assistance with their writing skills may enroll in English 137 and 138, courses taught primarily through tutorials and small classes. In a one-to-one situation, the staff of the workshop will offer a critique of papers brought in once a week by the student.

For students who are having immediate problems with specific papers in other courses, the workshop also has walk-in hours. The staff will be happy to discuss the strengths and weaknesses of any draft a student brings in. These hours will be posted outside 302 Rockefeller Hall as soon as staffing is completed. No appointment is necessary. For more information, call 256-6349.

There are various other aids for the students seeking help with writing. A series of writing assessment seminars is offered during Orientation Week to help students decide which Freshman Seminars to enroll in.

The writing workshop offers a series of term paper clinics in Uris and Mann libraries in the fall and spring. These clinics consist of a two-hour minicourse on researching and writing term papers: one hour is devoted to using the library resources and one hour to the problem of writing.

Two booklets may be useful to the student involved in writing papers. One is *A Writer's Responsibilities,* prepared by the Department of English and distributed free of charge by the Dean of the Faculty's Office, concerning plagiarism. The other is *Format,* a pamphlet concerning the correct format to use for research and term papers, available at nominal cost from the Cornell University Press.

Computer Services

Computer services are available in two major terminal clusters on campus in Uris and Upson Halls. Currently, these facilities offer four kinds of assistance:
1) programming in various computer languages is taught; 2) problem solving and data analysis can be done by researchers; 3) computer assisted instruction (CAI) is available through a system which interacts with the student in simulations, games, drills, or tutorials; and 4) editing and duplicating manuscripts is accomplished through storage and rearranging of information.

Duplicating Services

Xerox services are available in any of the seven copy centers on campus for a standard rate of 6¢ per page (7¢ for bond paper). Each center also has offset press facilities when multiple copies are needed. The cost depends on the number of pages to be copied; 10 copies of one page, however, costs 50¢. In addition, self-service xeroxing

machines are available across campus, in libraries and the campus store, for example. Many departments have either their own xerox machines or access to machines.

University Libraries

The Cornell University library system ranks in the top ten among major academic libraries in the United States. The system's eighteen libraries contain well over four million volumes and currently subscribe to fifty-one thousand periodicals.Together they provide the facilities for research and study in hundreds of undergraduate major subject areas and in over eighty-five fields of study for advanced degrees.

The Central Library, at the south end of the Arts Quadrangle, is composed of two parts. Uris Library, the building with the tower that has become the symbol of Cornell, is essentially an undergraduate library for students in the liberal arts. A principal aim of this library is to bring readers and books as close together as possible. Accordingly, the stacks containing more than 115,000 volumes are open to all, and only reserve books in heavy demand are held in a special category. There are listening rooms where students, singly or in groups, may hear recordings of the spoken word, and there is a lecture room with sound and projection capabilities.

Across the walk from Uris is the John M. Olin Library, devoted more specifically to graduate and faculty research. This closed-stack library houses many special collections of books and manuscripts, among them Rare Books, a collection on East and Southeast Asia, an Icelandic collection, History of Science collections, the Archives of the University, maps, and newspapers.

The two libraries, Uris and Olin, complement each other in support of the University's program of teaching and scholarship. In addition to these facilities, there is an extensive system of college and school libraries. Chief among these is the Albert R. Mann Llibrary, serving the Colleges of Agriculture and Life Sciences and Human Ecology, and located at the east end of the Agriculture Quadrangle. Mann Library, containing over 450,000 volumes, primarily in open stacks, serves not only the needs of students in those two colleges, but also houses the complete research library of the Division of Biological Sciences. Other college libraries include the Fine Arts Library, serving the College of Architecture, Art, and Planning; the libraries of the College of Engineering and the New York State College of Veterinary Medicine; and the libraries serving the Graduate School of Business and Public Administration, the Law School, the School of Hotel Administration, and the New York State School of Industrial and Labor Relations. In addition there are many large department libraries located throughout the campus. For more specific information, see the *Handbook of the Libraries* available at all libraries.

All of the libraries are open long hours, some of them until midnight. Many have special copying services, audiovisual facilities, bibliographic retrieval services, study rooms, microfilm and microfiche readers, typewriters, interlibrary loan services, and some publish handbooks and bibliographies that are distributed without charge. The library issues directories of locations by subject, hours, and services which are available in all the libraries. Schedules for vacation periods, intersession, and summer session are always posted or available at the separate libraries.

University Health Services

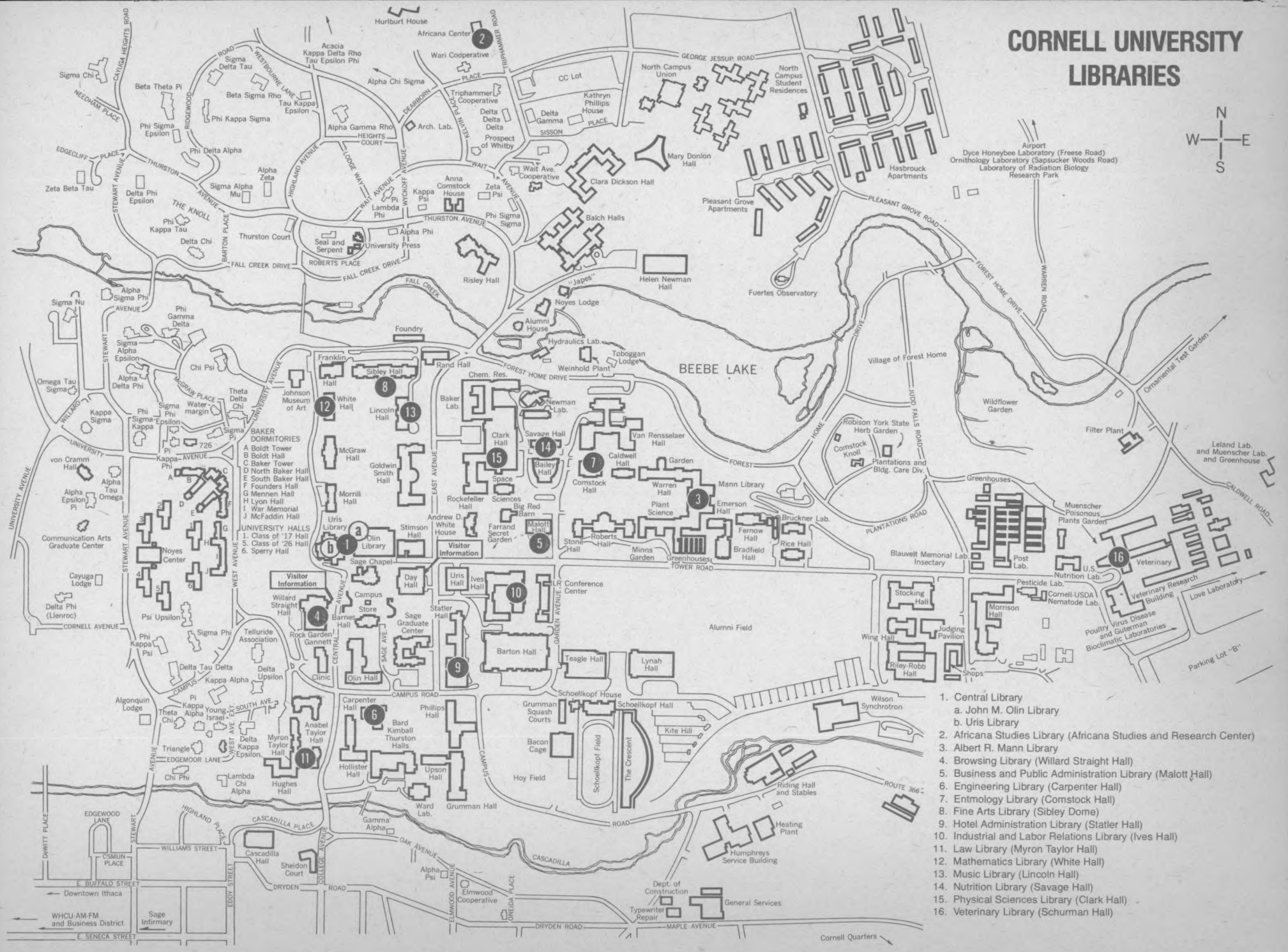
The University Health Services provides comprehensive medical care for all full-time undergraduate and graduate students enrolled at Cornell University in Ithaca. Gannett Medical Clinic, the outpatient unit, at 10 Central Avenue is open Monday through Friday from 8:30 a.m. to 5:00 p.m. and Saturday from 8:30 a.m. to 12:30 p.m. Sage Infirmary is open twenty-four hours a day during the school year and is available for infirmary care and emergency outpatient service after clinic hours. The entrance to Sage is on East Seneca Street between Stewart Avenue and Schuyler Place.

The clinic and infirmary medical staff, under the supervision of the clinical director, consists of attending physicians and health associates from the University staff and consulting physicians and surgeons from Ithaca and vicinity. All medical records are strictly confidential.

For a medical appointment a student should call 256-4082 or go to the clinic. For an appointment at the Mental Health Section a student should call 256-5208 or go to the offices at the clinic. A doctor is available for emergencies twenty-four hours a day. During clinic hours call 256-5155; after clinic hours call Sage Infirmary at 272-6962 or 272-6963.

The tuition charge covers the cost of the following services for the academic year:

1) unlimited visits to the Gannett Medical Clinic.
2) up to fourteen days of infirmary care each semester in Sage Infirmary,
3) routine diagnostic and X-ray examinations as ordered by Health Service physicians, and performed by Health Services staff,


CORNELL UNIVERSITY LIBRARIES
N
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E
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BEEBE LAKE
1. Central Library
a. John M. Olin Library
b. Uris Library
2. Africana Studies Library (Africana Studies and Research Center)
3. Albert R. Mann Library
4. Browsing Library (Willard Straight Hall)
5. Business and Public Administration Library (Malott Hall)
6. Engineering Library (Carpenter Hall)
7. Entmology Library (Comstock Hall)
8. Fine Arts Library (Sibley Dome)
9. Hotel Administration Library (Statler Hall)
10. Industrial and Labor Relations Library (Ives Hall)
11. Law Library (Myron Taylor Hall)
12. Mathematics Library (White Hall)
13. Music Library (Lincoln Hall)
14. Nutrition Library (Savage Hall)
15. Physical Sciences Library (Clark Hall)
16. Veterinary Library (Schurman Hall)

4) physiotherapy services,
5) counseling services at the clinic and in the Mental Health Section.

Expenses not covered by the University Health Services program are: visits to private physicians or private health care facilities; house calls; hospitalization expenses except in Sage Infirmary; hospital charges and fees for surgical procedures; fees for eye examinations for glasses; allergy injections; immunization vaccines and inoculations for travel abroad; physical exams for studies elsewhere or for fellowship applications; routine expenses for contraceptive, prenatal, or obstetrical care; and expenses connected with illness or injury occuring a) outside of Ithaca while in transit to and from college, on weekend trips, and on vacations away from Ithaca during the academic year; and b) during the summer unless enrolled as a summer student.

Students are automatically enrolled in a supplementary Accident and Health Insurance Plan which pays for many of the services not provided without charge by the University Health Services and includes a $20,000 major medical provision. The plan covers hospital care, charges for surgical procedures, care at Sage Infirmary in excess of fourteen days, consultations with a private physician or specialist if referred by a Health Services physician, expenses connected with illness or injury outside of Ithaca, and limited reimbursement for allergy injections, prescription drugs, and most outpatient services. Students are covered by this plan for the entire twelve months. Only by filling out a yearly waiver form, which is mailed with the first bursar's bill or available at Gannett Medical Clinic, the Bursar's Office at 260 Day Hall, and at University registration, will students *not* be covered and charged for this plan. The cost of this supplemental plan for 1978–79 will be approximately $84 for the entire twelve months and the charge will appear on each student's fall tuition bill. Unless students have other health insurance to supplement medical services provided by the University Health Services, they are strongly urged to take advantage of this plan. After the waiver process has been completed, a student may be reinstated if the parent's insurance plan drops students at a certain age or if the student's marital status changes.

The Basic Medical Services Program (BMSP) provides students' spouses with benefits identical to the student health care program on a fee-for-service basis. This plan is not to be confused with the supplementary Accident and Health Insurance Plan. Information and forms for the Basic Medical Services Program may be obtained by writing or visiting the University Health Services, Gannett Medical Clinic, Cornell University, 10 Central Avenue, Ithaca, New York 14853.

Campus Life

Office of the Dean of Students

The Office of the Dean of Students (ODS), located in 103 Barnes Hall, is concerned with student life at Cornell. The office and staff provide a variety of resources for all undergraduate and graduate students. In addition to serving as a general information center, the ODS responsibilities include counseling, new student orientation, student organizations, and residence life.

Programming and counseling for handicapped students, veterans, and married students; professional seminars for counselors and advisers; and the training and management of the Empathy, Assistance, and Referral Service (EARS) are performed by the counseling arm of ODS.

The office advises fraternities and sororities and the undergraduate and graduate student finance commissions. It aids in the development and administration of student activities and organizations and leadership conferences. All major campus events are scheduled through the Organizations and Activities Review Committee (OARC) based in this office.

Students may express an interest in specific organizations by filling out the Student Organizations Contact Sheet (SOCS) during registration each semester. ODS then distributes the names of interested students to Cornell's 450 organizations and keeps these sheets on file for use by registered organizations.

Programs for new students, especially those scheduled during Orientation Week, are coordinated working with staff in the schools and colleges, unions, residence halls, and other University divisions. During the year the office coordinates and plans sex education and alcohol and drug education programs for students.

ODS oversees residence life, including the development and coordination of policy and programs for the residence halls, small units, and cooperatives. The ODS staff also are involved in off-campus housing advice, room assignment policy for on-campus housing, room changes, contract terminations, resident staff selection and training, married and graduate student housing, and other housing operations and services.

Numerous publications originate from the ODS, including the Cornell Calendar; the *Student Organizations Directory;* the *Policy Notebook for Students, Faculty and Staff;* and *Off-Campus Housing in the Ithaca Area*. Students are invited to drop in or call Dean Elmer Meyer, Jr. or any of his staff at 256-4221 with questions or concerns.

Housing

There is sufficient variety among University residences to meet the needs and desires of most individuals. Each year, however, more students than the Department of Residence Life can accommodate want to live on campus. Acceptance to the University does not automatically guarantee a room in a residence hall, but all freshmen who apply for accommodations in residence halls are assured of an assignment their first year although late applications may be placed in a temporary assignment at the start of the year.

Room accommodations range in price approximately from $708–$1,448 for the academic year 1978–79. For specific rates by living unit, see the booklet, *Living on Campus, Housing for Single Students 1978–79*, available from the Department of Residence Life. Students who want to secure a room should return the housing application card with a $25 nonrefundable application fee as soon as they receive notification of acceptance. Room assignments are made in chronological order according to the date the Housing Assignment Office receives the application. If an application is received after all regular spaces have been assigned, a student may be offered a temporary assignment in a residence hall lounge that has been converted for occupancy until a regular assignment can be made.

A *limited* amount of space is reserved for transfer students. Physically handicapped students needing special housing arrangements should contact the associate director of residence life at Department of Residence Life (607/256-7592) and efforts will be made to provide a room that meets verified medical needs. All registered full-time students are eligible to live in University residence halls. There is no discrimination with respect to race, color, creed, religion, national or ethnic origin, sex, age or handicap in any of the room assignment procedures or in the operation of the residence halls.

Room assignments are sent out in early July along with the contracts, which must be signed and returned to the Housing Assignment Office within fifteen days of the day of receipt. The contract is a legal document, binding for the academic year. A $100 security deposit payable to Cornell University must accompany the contract. This security deposit serves as a damage deposit, refundable upon fulfillment of the contract if no damage has occurred. Contracts unaccompanied by a security deposit are not accepted.

All rooms are equipped with beds, mattresses, bed pads, desks, study chairs, study lamps, chests of drawers, mirrors, wastebaskets, and draperies, venetian blinds, or window shades. Each room or suite in the large residence halls is equipped with a telephone with the cost of the service and local calls included in the rent. If a student does not wish a telephone, a credit of approximately $80 per room is available.

The Department of Residence Life provides optional linen service for students living in the University residences. The charge for the academic year is $31 for two sheets, two towels, and one pillowcase a week; $24 for two sheets and one pillowcase a week; a blanket, pillow, and bedspread may be rented for $10.

Personal property is not insured by the University nor is the University liable for loss or damage to any article of personal property. Information on personal property insurance is available at the Office of the Dean of Students in 103 Barnes Hall.

If a student withdraws from the University before the end of the academic year, a portion of the housing charge is refunded. For specific details read the refund policies in the housing contract.

The Off-Campus Housing Office in 223 Day Hall maintains lists of accommodations that have been voluntarily submitted by local landlords.These lists are constantly changing and must be seen in the Housing Office. For more information, the booklet *Off-Campus Housing in the Ithaca Area* may be obtained from the above office.

Information concerning University apartments for student families is in the booklet, *Family Housing,* available from the Department of Residence Life, Cornell University, Building B-40, Hasbrouck Apartments, Ithaca, New York 14850.

Dining Services

The Department of Dining Services offers a variety of eating possibilities on campus. Students have the option of eating what, when, and where they choose, whether or not they live in residence halls. There are nine different dining rooms, all serving a minimum of three entree choices at each meal.Students may select and pay for meals *a la carte* at the Ivy Room in the lower level of Willard Straight Hall, Sage House in Sage Hall, the Pancake House in Noyes Lodge, and Hughes Dining in Hughes Hall. Contract dining and unlimited guest tickets, both of which allow students to eat as much food as desired at a meal, are available at Okenshield's on the lower level of Willard Straight Hall, Noyes Center and North Campus in the Unions on West and North Campus respectively, Balch Dining in Balch Residence Hall, Risley Dining in Risley Residential College, Hughes Dining in the Law School's Hughes Hall, and Sage House in Sage Hall.

All meals are served cafeteria style except for occasional specials and at the Pancake House where there is counter and table service. Each dining room has its weekly menu posted, or students may call 256-DINE to find out what will be served at dinner in the five contract dining rooms.

Co-op Dining is a completely voluntary contract program which allows students to eat without limitation of selection or quantity. Seven meal plan options are available ranging in price from $290 per semester for breakfast and lunch Monday through Friday to $490 per semester for breakfast, lunch and dinner six days a week with brunch and dinner served on Sundays. Co-op members may switch from one meal plan to another without penalty. Five Co-op facilities are located in North, West, and Central Campus, allowing students to eat wherever they prefer.

The annual nonrefundable membership fee for the Co-op Dining program is $70 for 1978–79. For students graduating at the end of fall semster or taking an authorized University leave of absence, a $25 refund will be made upon notification to the Central Dining Office. A $45 nonrefundable Co-op membership fee is paid by students who are registered at the University for only the spring semester. Co-op card photos can be taken at 233 Day Hall for a 75¢ service charge for each photo.

Co-op members are charged $5 for the replacement of a lost or mutilated Co-op card. If the card is subsequently found, the student is refunded $3. Co-op members who lose their cards during hours when the Central Dining Office is closed and wish to gain access to a Co-op unit may do so by purchasing a $2 lost card voucher and an unlimited guest ticket at the Co-op unit. The $2 is applied against the cost of the replacement card and the cost of the unlimited guest ticket is cancelled if the student obtains a new card and retrieves the unlimited guest voucher from the unit within 24 hours after the Central Dining Office is open.

The Co-op dining program does not cover the University recess periods of Thanksgiving, Christmas, intersession, spring, and summer.

Risley Residential College also has a dining program, prepaid each semester, which is mandatory for residents of Risley but open to all students. The nonrefundable membership fee is $70 per academic year and restrictions are identical to Co-op's permitting non-Risley residents to switch from Co-op to Risley or vice versa without penalty. A prorated amount of the fee is transferred to the program to which the student is changing. Risley Dining offers lunch and dinner, lunch only, or dinner only Monday through Friday.

Members who cancel any of the dining plans will receive a prorated refund only for the period after cancellation.

Cornell Dining also operates two small grocery stores: the Pick-Up, located on the lower level of Noyes Lodge, and the Mini Pick-Up in Noyes Center, which offer ice, beer and soda, cold cuts, dairy products, vegetables, paper goods, and snacks. Rounding out Dining's services on campus are approximately 250 vending machines in 60 campus buildings, and catering throughout campus.

All questions regarding the various dining programs and services may be directed to the Central Dining Office, 233 Day Hall, 256-5392.

Cornellcard, a University credit card for those who do not wish to pay for each meal or be on the Co-op Dining plan, is honored by Cornell Dining. For information about the Cornellcard program, see section on Payment of Bills, or inquire at the Bursar's Office, 260 Day Hall.

University Unions

The Department of University Unions at Cornell is composed of three union buildings which serve as centers of activity for Cornell students. These are Willard Straight Hall, the largest, oldest, and most centrally located; Noyes Center, located in the West Campus residential area; and North Campus Union, in the North Campus residential complex. A partial list of available union facilities includes dining areas, a browsing library, a theatre, billard and game rooms, study lounges, meeting rooms, a pottery shop, and darkrooms. Among the many special services available to students are a central ticket office, a rental service for audiovisual equipment and phonograph records, a dry-cleaning service, service desks where newspapers, magazines, and sundries are sold, a travel office, an art-lending library, and a check-cashing service for checks up to $25.

The unions are a major employer of students on campus and also enlist student volunteers on their boards and program committees. The union boards plan a wide variety of social, cultural, recreational, and educational activities and membership on any board is open to all members of the Cornell community.

University Unions also sponsors Cornell Cinema's films, the Cornell Concert Commission's popular concerts, University Unions Program Board's various productions, the Third World Student Programming Board, and Wilderness Reflections.

Union Hours

Willard Straight Hall	7:00 a.m. – 11:00 p.m., 7 days a week
Noyes Center	10:00 a.m. – 12:30 a.m., Sun. – Thurs. 10:00 a.m. – 1:30 a.m., Fri. & Sat. (Buildings opens for dining earlier)
North Campus Union	6:30 a.m. – midnight, Sun. – Thurs. 6:30 a.m. – 1:00 a.m., Fri. & Sat.

Campus Council

The Campus Council is the University-wide body that conducts hearings and discussions of campus issues, examines matters concerning the interest and welfare of members of the University, oversees the judicial system, and maintains a system of committees involved in areas of nonacademic University affairs. This system of committees and board of the Campus Council provides for participation in decision making by students, faculty, and other University employees. Committee and board meetings are open to the public. General information about the Campus Council may be obtained at its office, 133 Day Hall.

Cornell United Religious Work

Cornell United Religious Work coordinates religious affairs at Cornell. Participants in CURW may be involved in denominational, interreligious, and nondenominational activities. The denominational programs include daily or weekly opportunities for worship, study, and interaction. CURW member groups share in support and leadership of interreligious programs, such as the Sage Chapel Convocations, CIVITAS (Cornell-Ithaca-Volunteers-in-Training-and-Service), the Interreligious International Ministry (IRIM), noncredit courses, lectures, conferences, and involvement in varied services to the University community. A diverse staff of pastoral counselors and advisers, available day or night for consultation, may be reached through the office, 118 Anabel Taylor Hall, phone 256-4214. This office also has information concerning weekly religious convocations in Sage Chapel and worship opportunities in the local churches and synagogue. Anabel Taylor Hall houses the Commons, a coffeehouse providing a place for informal communication between faculty, staff, and students. Closely associated with CURW but independent of it is the Centre for Religion, Ethics, and Society Policy (CRESP), which is the nondenominational research/action component of religious affairs at Cornell.

Transportation Services

Traffic and Parking

All on-campus parking (except for certain metered and time zone areas) is by permit only and is subject to posted restrictions; vehicular access to the interior campus is restricted Monday through Friday from 7:00 a.m. to 5:00 p.m. A campus bus service operates between peripheral lots and the central campus; several community transit routes connect the University with surrounding residential and commercial areas. (See the section Bus Service for details.)

All members of the campus community (students, faculty, staff, and employees of non-University agencies located on University grounds) are required to register with the Traffic Bureau any motor vehicles (including motorcycles) in their possession which may *at any time* be parked on Cornell property. This registration information ensures that the owner or operator may be rapidly identified and contacted if necessary; for example, if a parked vehicle is involved in an accident, must be moved immediately, or has been left with its lights on. There is no charge for vehicle registration; however, a registration sticker is not, in itself, a parking permit.

In general, students residing in campus housing units and commuting students residing more than one and one-half air miles from the center of campus are eligible to purchase specific campus parking permits. Students planning to live in University dormitories and apartment complexes should ascertain the availability of student parking near their prospective residences before making their final housing selection since not all residence units have adjacent parking available.

Students requiring special access to parking and transportation facilities for medical reasons or other circumstances should contact the Traffic Bureau to discuss their needs.

Student motor vehicle registration and sale of 1978–79 parking permits and bus passes will be conducted in Lynah Rink on August 30 and 31, and September 1 and 4, 1978. Current parking permit eligibility criteria and prices, campus parking maps, consolidated bus service schedules, *Cornell University Regulations Governing Motor Vehicles,* and all other necessary materials will be available at the Traffic Bureau table in Lynah Rink. Students not present at those times or who later acquire a motor vehicle should visit the Traffic Bureau, 115 Wait Avenue, Monday to Friday during regular business hours (7:45 a.m. to 5:00 p.m. while classes are in session; 8:00 a.m. to 4:00 p.m. during summer and intersession) to register their vehicles and obtain parking permits. In order to be valid, registration and parking permits must be affixed and displayed on the vehicle as directed by the Traffic Bureau at the time of issuance.

Permit prices are $5 for married student housing (first car; $54 for each additional car), $20.25 or $27.00 for commuting students, and $40.50 for dormitory residents. Permits are valid for the period September 1 to June 1 unless otherwise specified. Student bus passes cost $25 per academic year ($10 with the purchase of an A permit). Current parking permits and bus passes may be turned in any time after October 1, 1978 up to March 1, 1979 to receive a prorated refund. Individuals returning their current permit for a refund may not repurchase a permit for the same area later in the year.

Parking and traffic regulations are in effect continuously throughout the calendar year unless otherwise specified. The University reserves the right to change its parking and traffic regulations, fees, and fines at any time.

A student's registration in the University constitutes an agreement to abide by all parking and traffic regulations or be subject to the prescribed penalties. Certain areas on campus are subject to special parking restrictions; students should check the signs, the parking map, and the regulations for details. Regulations are carefully enforced; violators will be issued summonses and may have their vehicles towed away at their own expense. The following chart summarizes the various types of parking violations and assessed fines. No individual who has unpaid or uncleared parking violations from current or previous years will be issued a permit or bus pass until a settlement has been made.

Parking Violation Fine Schedule*

1) Not registered with University or registration not displayed (applies to community members only)
   $10 fine each violation; reduced to $5 for first violation if vehicle is registered or registration is properly displayed within 5 working days of issuance of citation
2) Parking without proper permit in restricted parking area
   $5 each violation
3) Parking in no parking zone
   $5 each violation
4) Parking in life safety zone
   $15 each violation; vehicle may be towed at owner's expense
5) Parking overtime at meter or in time zone
   $5 each violation
6) Parking in violation of posted regulations
   $5 each violation

*All violations may be appealed within 10 working days of issuance of citation.

The Traffic Bureau will be glad to assist any individual with general inquiries or special problems and requests (telephone 256-4600).

Bus Service

Information about the campus bus system may be obtained from the Campus Bus Service (telephone 256-3782). Schedules for on-campus and off-campus service are posted in all bus stop shelters and are also available from the Traffic Bureau and from the Information and Referral Center in the Day Hall lobby.

On-Campus Service

All campus bus stops are clearly designated. Passengers are to board buses through the front door and exit through the rear door. The fare is 10¢ a ride; only exact change is accepted. Regular employees are eligible to receive free passes, available at the Traffic Bureau. Students may buy semester passes for $13 ($5 for students with A parking permits) or academic year passes for $25 at the Traffic Bureau and at the Willard Straight Ticket Office.

A Lot-B Lot Route Unless otherwise specified in advance by public notice, buses run until 6:00 p.m., Monday through Friday throughout the year. Buses begin running from B Lot at 5:45 a.m. and from A Lot at 7:00 a.m. Service intervals range from approximately five minutes at times of heavy use to fifteen minutes at other times.

Evening Service Unless otherwise specified in advance by public notice, "Blue Light" buses run from Donlon Circle via West Campus to the Dairy Bar at twenty-minute intervals from 6:30 until 11:00 p.m., Monday through Friday during the academic year. There is no passenger fee.

Off-Campus Service

North-East Transit System Buses run between Lansing and Cayuga Heights apartment complexes and the Cornell campus from 7:15 until 9:00 a.m. and from 4:05 until 5:40 p.m., Monday through Friday throughout the year. Cash fare is 30¢ a ride; discount tickets are available. For further information call 257-2277 (Swarthout and Ferris Bus Service) or 256-5373 (Off-Campus Housing).

Research Park Service A van runs between campus (Day Hall and the Dairy Bar) and Research Park (Langmuir Lab) at approximately one-hour intervals from 8:00 a.m. until 4:30 p.m., Monday through Friday throughout the year. There is no passenger fee. For further information call 256-3782 (Campus Bus Service).

Community Service Ithaca Transit buses serving the downtown, Ithaca College, and Cayuga Heights areas stop on the Cornell campus at Day Hall, Risley Hall, the North Campus dormitories, and Hasbrouck Apartments. Buses run from 6:00 a.m. until 6:17 p.m., Monday through Saturday throughout the year. An evening service operates at hourly intervals from 7:17 until 11:17 p.m., Friday and Saturday only. Cash fare is 25¢; discounts are available. For further information call 272-1713, extension 243 (Ithaca Transit).

Cornell Charter Bus Service Campus buses may be chartered for out-of-town trips or to transport groups on campus or between campus and local sites. For information call 256-3782 (Campus Bus Service).

Public Safety Services

Emergencies

Accidents, crimes, fires, and all other emergencies on campus should be reported immediately to the Department of Public Safety, extension 6-1111. The Department of Public Safety is located in G-2 Barton Hall and is open twenty-four hours a day. Public telephones to report emergencies are located throughout the campus and can be readily recognized by blue lights above them.

Lost and Found

The central Lost and Found Office operated by the department of Public Safety is located in G-18 Barton Hall and is open from 10:00 a.m. to 4:00 p.m., Monday through Friday, telephone 256-7194. Lost articles are often turned in to the information desks in Day Hall and Willard Straight Hall and other central offices, but all such items are eventually turned over to the central lost and found.

University Services Bureau

The University Services Bureau is responsible for scheduling and staffing extra University functions that require public safety personnel for traffic direction or crowd control. Contact the manager of the University Services Bureau at 6-1111.

Support Services Section

The Public Safety Support Services Section provides lectures and orientation to various University groups on topics ranging from general public safety's services to drug abuse, crime prevention, and rape and assault prevention. Contact the manager of the Support Services Section at 6-7302 if interested in these free programs.

Campus Store

The Cornell Campus Store is located on Central Avenue across the street from Willard Straight Hall. In addition to required text books, it has many nonrequired hardback and paperback books, engineering and drafting supplies, art prints and posters, college jewelry and class rings, sportswear, gifts, candy, snacks, and sundries.

Textbooks bought for a course may be returned only if in absolutely new condition and accompanied by the register receipt and returned within a specified length of time at the beginning of each term (approximately 14 days).

The Campus Store also offers many services to the student: a check-cashing service which allows a student to cash one check a day of up to $25 with a Cornell I.D. and a 10¢ fee, typewriter rental and repair, camera and pen repairs, film processing, used book buy-back service, racquet stringing, key making, thesis and report binding, and copy service.

The Campus Store will accept personal checks if they are accompanied by the student I.D. card or the Cornellcard, Bankamericard, or Master Charge.

Store hours are 8:30 a.m. to 5:00 p.m., Monday through Friday, and 10:00 a.m. to 2:00 p.m., Saturday except during the regularly scheduled vacation periods.

Extracurricular Activities

The cultural, intellectual, and social life of any University community is rich and varied. At Cornell the striking feature of student life is its diversity. For those at Cornell with interests in particular fields, there are more than three hundred organized groups that include both faculty and students in their membership. Among them are clubs for persons with similar academic interests or similar hobbies, local chapters of professional organizations, associations of students from other nations, and a number of national honorary societies that recognize achievement in scholarship and other fields of endeavor. If an interest group does not now exist, like-minded persons may readily establish such an organization.

Music

Students who wish to participate in music making will find a wide range of opportunity through the Sage Chapel Choir, the Cornell Chorus, the University Glee Club, the University orchestras and bands, chamber music ensembles, the Opera Workshop, and other musical organizations.

The University Faculty Committee on Music sponsors programs by visiting soloists and major orchestras in the Bailey Hall Concert Series; string quartets and other groups in the Statler Series at Alice Statler Auditorium; and occasional operas, ballets, and special events. In addition, the Department of Music sponsors annually more than sixty free concerts and lectures by visiting artists or by Cornell faculty and students.

On the lighter side, the Cornell Concert Commission offers a series of student produced popular rock, folk, soul, and jazz concerts which recently has included such performers as Linda Ronstadt, Marshall Tucker, and Renaissance. Informal concerts in the Commons, a coffeehouse in Anabel Taylor Hall, have featured local bluegrass and folk performers.

Theatre Arts

Diverse dramatic productions are presented by Cornell students under the sponsorship and general supervision of the Department of Theatre Arts. Six of these productions are presented as a "season," which is scheduled in advance and for which open tryouts are held at the beginning of each semester. Other more informal productions are also scheduled throughout the year; invitations to participate in these productions are posted on the bulletin boards of Lincoln Hall. Productions are normally mounted in the facilities available in the University Theatre in Willard Straight Hall, the Drummond Studio in Lincoln Hall, and the Kaufmann Auditorium in Goldwin Smith Hall.

In addition to these theatre pieces, a series of dance programs is sponsored jointly by the Theatre Arts Department and the Department of Women's Physical Education.

Students are provided with filmmaking opportunities through the facilities of the Department of Theatre Arts.

Lectures

Dozens of extracurricular lectures are given every week ranging from scholarly presentations on subjects of special interest, such as "The Comparative Biochemistry of Muscle Contraction," to well-known speakers with campuswide appeal, such as Jane Goodall and Edward Heath.

Art Exhibitions

Cornell is generously supplied with art exhibitions, some permanent and some temporary. The displays range from the works of students and visiting collections to the permanent University collection housed at the Herbert F. Johnson Museum of Art, one of the most outstanding buildings on the Cornell campus. Other campus locations for art displays include the Art Room in the Straight, the Fine Arts Gallery in Sibley, and the galleries in Goldwin Smith Hall, Martha Van Rensselaer Hall, and Franklin Hall.

Films

Cornell does not disappoint the filmgoer. Throughout the year and on almost every night of the week, single film showings and film series make available educational and entertaining films at reduced rates. In addition, there are a half dozen commercial theatres in Ithaca itself, making movie going among the most popular leisure-time activities.

Publications

Cornell students edit and publish a wide variety of publications, including a yearbook, the *Cornellian;* magazines such as *The Cornell Review,* a journal of the arts and sciences, and *Praxis,* a literary magazine. A number of other magazines are published relating to special fields of interest such as the *Cornell Engineer,* the *Cornell Countryman,* and the *Cornell Law Review.* Cornell students are in complete charge (writing, editing, and business affairs) of the publication of the *Cornell Daily Sun,* an independent daily newspaper. Cornell students also publish a student *Deskbook* annually, containing general information. There are charges for many of these publications, but the University publishes the *Cornell Chronicle,* a weekly newspaper which is free of charge to all students, faculty, and staff.

Fraternities and Sororities

Fraternities. For many fraternity life is an integral part of the Cornell experience. There are presently forty-eight social fraternities at the University with about 30 percent of the male undergraduate student body as members. Each has its particular flavor and environment. With such a large system, one of the largest in the country, diversity is the key to its continuing growth. Students have the opportunity to choose the life-style that appeals to them, from a relatively small fraternity with seventeen members to one of over a hundred. The system is coordinated by the Interfraternity Council, a student-run board that oversees the many programs associated with fraternities.

Sororities. There are ten sororities on the Cornell campus, ranging in size from 23 to 105 members. Approximately 12 percent of the woman students at Cornell are members of these houses. They are an integral and important part of a campus that offers a wide variety of residential and social possibilities. The Cornell Panhellenic Council is the governing body of the sorority system and it coordinates the activities among the houses within the campus and community settings.

Athletics

At Cornell athletics are designed to encourage the participation of every able and interested student, either in varsity sports or in the extensive intramural program. Cornell supports the largest intercollegiate athletic program for men and women in the country and belongs to the Ivy League. There is intercollegiate competition for men in he following sports: baseball, basketball, crew, 150-pound crew, cross-country, fencing, football, 150-pound football, golf, gymnastics, hockey, lacrosse, polo, rifle, sailing, skiing, soccer, squash, swimming, tennis, track, and wrestling.

Cornell fields eighteen intercollegiate women's teams, more than any other college or university in New York State. The women's athletic program includes basketball, bowling, crew, cross-country, fencing, field hockey, golf, gymnasitics,

ice hockey, lacrosse, polo, sailing, skiing, swimming, synchronized swimmming, tennis, track, and volleyball.

Needless to say, one can enjoy these intercollegiate athletic programs not only as a participant, but also as a spectator.

Cornell's extensive intramural program gives students the chance to exercise and enjoy whatever athletic skills and interests they may have. This program is one of the largest of its kind in the country, with an incredible variety that includes, for example, sailing, judo, broomstick polo, and horseshoes, in addition to more usual sports such as touch football and softball.

Recreational Facilities

The University-owned eighteen-hole championship golf course designed by Cornellian Robert Trent Jones is located on Warren Road near Hanshaw Road. It is open from approximately April 1 to November 1, seven days a week. Hours are from 7:00 a.m. until dark weekdays and from 6:00 a.m. until dark Saturdays and Sundays. Students pay a $3 fee daily or may purchase student memberships for $30 per semester. Faculty and staff pay a $4 fee daily or may purchase seasonal memberships for $150. Private instruction, rental of clubs, a driving range, and putting course are also available.

Helen Newman Hall, located near Balch Residence Halls, contains a large gymnasium, sauna, swimming pool, and bowling lanes. Outside are practice fields and tennis courts. The bowling lanes are open 10:00 a.m. to 11:00 p.m. weekdays and Saturday nights from 6:00 p.m. to 11:00 p.m. The charge is $1.25 per line and shoe rental is available.

Swimming Pool Hours
Helen Newman Hall

Women only

9:00 a.m. – 10:00 a.m. and 12:20 p.m. – 1:20 p.m.	Monday through Friday
9:00 p.m. – 11:00 p.m.	Monday
7:00 p.m. – 9:00 p.m.	Thursday & Friday

Coed

9:00 p.m. – 11:00 p.m.	Tuesday through Friday
2:00 p.m. – 4:00 p.m.	Saturday
7:00 p.m. – 8:30 p.m.	Tuesday — Family Swim Session

There is no charge to students. Faculty and staff must pay 50¢ per session or purchase a privilege card for $15 per semester.

Teagle Hall, located between Lynah Rink and Barton Hall on Garden Avenue, contains a large gymnasium, all-purpose rooms, steam bath, crew tanks, outdoor practice fields, and a swimming pool. All facilities can be used when not needed for physical education classes, Monday through Friday, unless needed for intercollegiate or regularly scheduled intramural events.

Swimming Pool Hours
Teagle Hall

Men only

noon – 1:30 p.m.	Monday through Friday
9:00 p.m. – 10:00 p.m.	Tuesday
7:00 p.m. – 9:00 p.m.	Friday
2:00 p.m. – 5:00 p.m.	Saturday
noon – 1:30 p.m.	Sunday

Coed

7:30 p.m. – 10:00 p.m.	Monday
7:30 p.m. – 9:00 p.m.	Tuesday
9:30 p.m. – 10:30 p.m.	Thursday
1:30 p.m. – 3:00 p.m.	Sunday
7:30 p.m. – 9:30 p.m.	Wednesday — senior life saving
7:30 p.m. – 9:30 p.m.	Thursday — Family night for faculty & staff

Across Garden Avenue is Barton Hall, a vast arena offering facilities for volleyball, basketball, and jogging. Situated midway between Teagle and Barton halls are the Grumman Squash Courts with facilities for squash, handball, and racquet ball.

Just south of Schoellkopf Field on Route 366 are the Oxley Polo Arena and Orthwein Stable where private instruction in horseback riding is available. For more information, call 256-3625.

Lynah Rink, behind Teagle Hall, opens for ice skating October 16, 1978. Skates may be rented for 75¢. It is open to the public from 1:15 p.m. to 2:45 p.m. weekdays and 3:00 p.m. to 4:30 p.m. and 7:30 p.m. to 9:00 p.m. Sundays. The cost is 75¢ each session. Groups interested in renting the rink for an entire evening should call Lynah Rink 256-4171.

Students can rent canoes on Beebe Lake behind Noyes Lodge from the Cornell Outing Club at appropriate times. Tennis courts are scattered throughout the campus.

Cornell Alumni Association

Over a century ago, on June 26, 1872, at the time of the annual commencement in Ithaca, representatives of the first four classes of Cornell University met to form the Cornell Alumni Association, "to promote in every proper way the interest of the University and to foster among the graduates a sentiment of regard for each other and attachment to their Alma Mater."

The membership of the association includes every Cornell graduate, every matriculant of Cornell whose entering class has been graduated, and every candidate for an advanced degree at Cornell. At present there are more than 150,000 living Cornell alumni, including approximately 9,000 living overseas.

The association holds its annual meeting in Ithaca during Reunion Weekend, when the president of the association reports for the executive committee on the year's activities; the president of the University gives his report on the state

of the University; the results of the alumni trustee elections are announced; and other association business is transacted. All members present are eligible to vote on any matter brought before a meeting of the association. For more information contact Frank Clifford, Director of Alumni Affairs, Alumni House, 626 Thurston Avenue, at 256-2390.

Cornell Ambassadors

The Cornell Ambassadors is an organization of undergraduate students founded in 1969 for the purpose of furthering undergraduate-alumni relations. The organization, associated with the Office of Alumni Affairs from its inception, is convinced that continual student-alumni interaction is vital to the best interests of the University. Its membership is composed of representatives from all seven of the University's undergraduate colleges as well as the Graduate and Law schools. Generally Cornell Ambassadors should be articulate, informed, and willing to take on the responsibility of speaking assignments. These assignments allow the Ambassador to present his or her own viewpoint — a viewpoint that need not necessarily reflect the views of other members of the organization or of the Cornell student body. Ambassadors serve as hosts during Homecoming Weekend, meet with Cornell Council members during Trustee/Council Weekend, and lend a hand in other Ithaca-based alumni activities. Participation in an extensive series of student phonathons for the Cornell Fund affords an unusual opportunity for Ambassadors to encourage continued alumni support. For more information contact John Stone at the Alumni House, 256-4850.

University Requirements for Graduation

For degree requirements such as residency, number of credits, distribution of credits, and grade averages, see the individual requirements under each college or school or contact the college offices.

Physical Education

All undergraduate students must complete the University requirement of two terms of physical education. This requirement is usually completed during the first two terms in residence. Postponements are allowed *only* by consent of the University Faculty Committee on Physical Education. Physical education courses are described in *Cornell University: Description of Courses*. Students are exempt from fulfilling this requirement only when it is recommended by the Cornell medical staff, or because of unusual conditions of age, residence, military service, or outside responsibilities. Students should check with their respective college offices if they have any questions about this requirement.

Swim Test

All new students who do not pass a basic fifty-yard swim test are required to include swimming in their program of physical education unless they are excused by Gannett Clinic. All nonswimmers will be registered in beginning swim classes.

Undergraduate Degrees

The undergraduate curricula at Cornell University lead to the Bachelor of Arts (A.B.) degree in the College of Arts and Sciences. The Bachelor of Science (B.S.) degree is offered by the College of Agriculture and Life Sciences, the College of Human Ecology, the School of Hotel Administration, the College of Engineering, and the School of Industrial and Labor Relations. The College of Architecture offers the Bachelor of Architecture (B.Arch.), the Bachelor of Fine Arts (B.F.A.), and the Bachelor of Science (B.S.) degrees. The academic programs for which degrees are awarded are registered with the New York State Education Board and are appropriately linked with HEGIS codes for federal and state reporting purposes. In order to be eligible for certain categories of financial aid, enrollment in a registered degree program is mandatory. See degree program listings under individual schools and colleges for further information.

Cornell University Grading System*

Grades

S-U		Letter		Grade Point Value	Description
S	PASSING	PASSING	A+ A A–	4.3 4.0 3.7	*Excellent to Very Good:* comprehensive knowledge and understanding of subject matter; marked perception and/or originality.
			B+ B B–	3.3 3.0 2.7	*Good:* moderately broad knowledge and understanding of subject matter; noticeable perception and/or originality.
			C+ C C–	2.3 2.0 1.7	*Satisfactory:* reasonable knowledge and understanding of subject matter; some perception and/or originality.
U	FAIL		D+ D D–	1.3 1.0 0.7	*Marginal:* minimum of knowledge and understanding of subject matter; limited perception and/or originality.
		FAIL	F	0.0	*Failing:* unacceptably low level of knowledge and understanding of subject matter; severely limited perception and/or originality.

Symbols Used in Lieu of Grades

INC	Final	Incomplete: (1) Student has substantial equity in course, and (2) unable to complete course requirements because of circumstances beyond his control. (3) INC is not a student option.
V		Summer School and Extramural students only. Visitor (Auditor) — when registered officially and attendance satisfactory. Graduate students only may officially audit courses, but the course will not appear on the transcript.
R		Registered in year course approved by the college as not requiring a grade at the end of the first (current) term.
NMG	Midterm	No Midterm Grade (Midterm only): Student enrolled and attending, but not practical to give grade.
NA		Not attending (Midterm only): Student is officially enrolled but has not attended, or has not attended beyond the initial three weeks of the semester.

* Adopted by University Faculty in May 1965 and revised in April 1978.

Privacy of Records

According to federal law, grades are restricted information and may be released only to the student, or at the student's written request, and only for a particular purpose. Thus grades earned on exams or in courses may not be posted by name. Posting by student I.D. number is permissable. Graded papers and exams, if returned, must be returned to individual students and should not be accessible to anyone but the author. For example, setting batches of papers and exams in a box or on a table is inappropriate and illegal.

Grading Guidelines

Incomplete

The symbol of Incomplete is only appropriate when two basic conditions are met:

1) The student has a substantial equity at a passing level in the course with respect to work completed; and
2) The student has been prevented by circumstances beyond the student's control, such as illness or family emergency, from completing all of the course requirements on time.

An Incomplete may not be given merely because a student fails to complete all course requirements on time. It is not an option which may be elected at the student's own discretion.

While it is the student's responsibility to initiate a request for an Incomplete, reasons for requesting an Incomplete must be acceptable to the instructor, who establishes specific make-up requirements. The instructor has the option of setting a shorter time limit than that allowed by the student's college for completing the course work. Several colleges require that a statement signed by the instructor be on file indicating the reason for the Incomplete and the restriction, if any.

The consequence of failure to complete all course work within the time permitted will depend upon the policy of the student's college of registry. Some colleges convert Incompletes to a grade of "F"; other let the grade of Incomplete stand on the student's transcript. In either case, the option to make up the work is lost.

It is the responsibility of the student to see that all Incompletes are made up within the deadline and that the grade change has been properly recorded with the student's college registrar.

Under no circumstances should faculty given an Incomplete due to pressure to meet the deadline for reporting grades. The symbol Incomplete becomes a permanent part of the student's transcript, even when a grade is later submitted.

Grade Distribution and Procedures

Distribution

Grades for the spring semester are mailed to the student in the summer. Grades for the fall semester are handed to the student by the student's college at spring semester registration. Summer session grades are mailed to students as soon as available after the summer term is completed.

Transcripts of Record

Official transcripts of student records are issued upon written request of the student or former student whose financial obligations to the University are met in full. Transcript cost is $2 for the first (or single) copy and $1 for each additional copy on the same order. Each degree recipient is given a free transcript with the diploma. Transcripts requested within one month of the close of a semester may not reflect current grades.

Official Transcripts

An official transcript is one that bears the official seal of the University and the signature of the University registrar, sent in a sealed envelope directly from the Office of the University Registrar to another institution or agency as directed by the student.

Student Copy Transcripts

A Student Copy Transcript is one delivered to the student and does not bear the seal of the University nor the signature of the University registrar. It is informational and is not intended to be official. Many institutions and agencies will not accept as official any transcript that does not come directly from the Office of the University Registrar.

Class Schedules and Attendance

All lectures, recitations, and similar exercises start at 8:00 a.m., 9:05 a.m., 10:10 a.m., 11:15 a.m., 12:20 p.m., 1:25 p.m., 2:30 p.m., or 3:35 p.m. and last fifty minutes, except that on Tuesday and Thursday the first and second, the third and fourth, the fifth and sixth, and the seventh and eighth periods may be combined to allow for longer meeting times.

All laboratories and similar exercises that continue for 1 hour and 55 minutes, 2 hours and 25 minutes, or 3 hours are scheduled as shown in table below.

On Monday, Tuesday, Wednesday, and Thursday the hours of 4:25 to 7:30 p.m.; on Friday the hours after 4:25 p.m.; on Saturday the hours after 12:05 p.m.; and all day Sunday are free from all formal undergraduate class or laboratory exercises.

Evening classes are held only on Monday and Wednesday and only when regularly scheduled and included in written college announcements or when recommended by the Committee on Academic Records and Instruction. Evening lectures, recitations, and similar exercises start at 7:30 and 8:35 p.m.; evening laboratories and similar exercises start at 7:30 p.m.

1 hour and 55 minutes	2 hours and 25 minutes	3 hours
8:00 a.m. – 9:55 a.m.	7:30 a.m. – 9:55 a.m.	8:00 a.m. – 11:00 a.m.
10:10 a.m. – 12:05 p.m.	10:10 a.m. – 12:35 p.m.	10:10 a.m. – 1:10 p.m.
12:20 p.m. – 2:15 p.m.	2:00 p.m. – 4:25 p.m.	1:25 p.m. – 4:25 p.m.
2:30 p.m. – 4:25 p.m.	7:30 p.m. – 9:55 p.m.	7:30 p.m. – 10:30 p.m.
7:30 p.m. – 9:25 p.m.		

Final Examinations

Final examinations for undergraduate courses are scheduled by the Office of the Registrar in consultation with college and department offices. Examinations may be one, two, or two and one-half hours in length at the discretion of the department concerned. Examinations not listed in the registrar's examination schedule will be arranged by the professor in charge and must fall within the announced examination period, except by the express permission of the dean of the faculty in accordance with existing Faculty legislation.

Class Attendance and Absences

Students are expected to be present throughout each term at all meetings of courses for which they are registered. There is no University excuse for absence from class. Each school and college has its own policy on excused absences. A student whose participation in athletics or other recognized extracurricular activites requires occasional absence from the campus should present an appropriate letter attesting that the prosposed absence is in connection with a recognized activity.

Legislation originally passed by the University Senate and still University policy recommends that students not be penalized for the observance of religious holidays and that they be permitted to make up classes, exercises, and examinations missed on such holidays.

The right to excuse a student from class rests with the faculty member in charge of that class at all times except during the periods just before and just after Thanksgiving, Christmas, and spring vacations. Penalties for unexcused absences are at the discretion of the individual faculty member.

By direction of the University Faculty, each faculty member and instructor has the special responsibility for maintaining the regular quality and content of instruction in classes held just before and just after University vacations. This responsibility prevails regardless of the number of students present in the classroom.

Auditing Courses

Undergraduate students may attend courses as a visitor (auditor) with special permission of the instructor, but no official record is made of the audit. Persons enrolled in the Summer Session and extramural division may enroll as auditors and receive the symbol of "V" on their official academic record.

Leaves and Withdrawals

A leave of absence must be requested from the college in which the student is enrollled. A leave of absence is granted for a specified time after which the student is expected to return to resume course work. The student should inform the college of enrollment of his or her intent to return.

A student may withdraw from the University at the student's discretion. However, a college may withdraw a student on the basis of its good standing policy. A student who withdraws from the University through a college must reapply for admission through the college of enrollment.

Internal Transfers

A student in good standing may apply to transfer from one college to another within the University. It is necessary for an internal transfer to inform the admitting college of the acceptance of admission within seven days of the offer of admission.

Schools and Colleges

New York State College of Agriculture and Life Sciences

Administration

David L. Call, Dean
Joan R. Egner, Associate Dean
J. Robert Cooke, Director of Instruction
Helen L. Wardeberg, Associate Director of Instruction
Noland L. VanDemark, Director of Research and Director of the New York State Agricultural Experiment Station (Ithaca)
Ronald J. Kuhr, Associate Director of Research and Associate Director of the New York State Agricultural Experiment Station (Ithaca)
Donald W. Barton, Director of the New York State Agricultural Experiment Station (Geneva) and Associate Director of the New York State Agricultural Experiment Station (Ithaca)
Alexander C. Davis, Associate Director of the New York State Agricultural Experiment Station (Geneva)
Lucinda A. Noble, Director of Cooperative Extension (Acting)
David T. Smith, Associate Director of Cooperative Extension
Joseph F. Metz, Jr., Director of International Agriculture and Director of Planning and Facilities

Degree Programs

	Degree	*HEGIS Code*
Agricultural Business Management and Marketing	B.S.	0112
Agricultural Economics	B.S.	0111
Agricultural Education	B.S.	0899
Agricultural Engineering	B.S.	0903
Animal Physiology and Anatomy	B.S.	0410
Animal Science	B.S.	0104
Aquatic Science	B.S.	0107
Atmospheric Sciences	B.S.	1913
Biochemistry	B.S.	0414
Biological Sciences	B.S.	0401
Botany	B.S.	0402
Communication Arts	B.S.	0601
Ecology and Evolution	B.S.	0420
Education	B.S.	0801
Entomology	B.S.	0421
Environmental Horticulture	B.S.	0108
Environmental Technology	B.S.	0199
Farm Business Management and Finance	B.S.	0110
Field Crops	B.S.	0102
Floriculture and Ornamental Horticulture	B.S.	0109
Food Industry Management	B.S.	0112
Food Science	B.S.	0113
General Environmental Studies	B.S.	0420
General Plant Sciences	B.S.	0402
General Studies	B.S.	0101
Genetics and Development	B.S.	0422
International Agriculture	B.S.	0101
Landscape Architecture	B.S.	0204
Microbiology	B.S.	0411
Natural Resources	B.S.	0115
Neurobiology and Behavior	B.S.	0425
Plant Breeding	B.S.	0116
Plant Pathology	B.S.	0404
Pomology	B.S.	0108
Resource Economics	B.S.	0111
Rural Sociology	B.S.	2208
Soils Science	B.S.	0103
Statistics and Biometry	B.S.	0419
Vegetable Crops	B.S.	0108

Facilities

The College of Agriculture and Life Sciences with 2,900 undergraduates is the second largest of the University's undergraduate divisions. Many of its 18 major buildings are clustered around the Ag Quad on the upper campus. There are 14,200 acres of land for research and instruction, 46 greenhouses, a forest, experiment stations in Ithaca and Geneva, and numerous farms and facilities across the state.

Mann Library houses one of the largest agricultural collections in the country. The Computer Assisted Searching (COMPAS) system provides on-line communication with large data bases in a number of areas. Students also have access to IBM's large 370/168 computer and both TELENET and EDUNET worldwide computer networks.

Curriculum

The curriculum is anchored in the biological and physical sciences. Nine program areas encompass some 50 undergraduate specializations providing more than 500 courses for undergraduates in the College. The variety of programs offered in the College is in keeping with its mission "to increase man's understanding of natural processes in the areas of agricultural sciences, biology and the use of natural resources and the environment; to educate the citizens for activity and leadership in these areas; and to translate new knowledge into action for the well-being of the people, their agriculture, their resources, and the development of rural communities."

The College of Agriculture and Life Sciences is also a major research institution investigating everything from how to produce more grain per acre, more milk per cow, and more meat per animal to how the process of photosynthesis can be "translated" to help man develop more efficient means of food production, how the study of homing pigeons may help predict earthquakes, and how the Adirondacks can be protected from the acid rain carried by clouds from polluted metropolitan areas. Incorporating research findings into the instructional program creates a stimulating learning environment.

The College of Agriculture and Life Sciences students form an academically select group. About 90 percent were in the upper fifth of their high school graduating classes. Most students come from New York State, but about 15 percent come from other parts of the United States. Students from many countries around the world attend the College. There are exchange students from Sweden, Mexico, and England in residence. Nearly half of the undergraduates

are women. Approximately 40 percent of the undergraduate students are transfers who have taken part of their collegiate work at community colleges, agricultural and technical institutes, and other academic institutions. About a thousand graduate students attend classes in this college.

Admissions

The Admissions Committee selects those students who are academically well prepared and appear most likely to profit from the various programs offered in the College of Agriculture and Life Sciences. The committee examines each applicant's educational goals, college entrance test scores, high school record, work experience, and recommendations by counselors, alumni, and others. Although the committee uses general guidelines to evaluate the academic strengths of each application, there are no absolute standards for admission.

An applicant must (1) be at least sixteen years old; (2) have completed high school with a minimum of sixteen units, including four units of English and three units of mathematics, with three units of science (biology, chemistry, and physics) recommended; and (3) have taken the Scholastic Aptitude Test of the College Entrance Examination Board (SAT) or the American College Testing Program (ACT).

Applicants submitting SAT results are encouraged to take achievement tests in two of the following: English composition, mathematics, and science. Students who wish to major in the biological sciences should have a strong foreign language background.

Transfer Students

Many students enter the College as transfer students. Those planning to attend a two-year college can apply to Cornell while in high school and be accepted for their junior year under the Guarantee Transfer Program.

Students attending a two-year college normally complete their associate degree prior to transfer. No more than sixty credits may be transferred from any combination of colleges, including summer courses.

Program of Study

Agriculture and Life Sciences programs offered at Cornell lead to the degrees of Bachelor of Science, Master of Science, and Doctor of Philosophy, as well as several professional degrees including the Master of Professional Studies, Doctor of Education, and Master of Arts in Teaching.

Information about academic programs, admissions, financial aid, placement, and career opportunities may be found in *Agriculture and Life Sciences at Cornell*, the *Announcement of General Information*, the *Announcement of The Graduate School*, and in the special program area announcements prepared by the College of Agriculture and Life Sciences.

Undergraduate Degree Requirements

To qualify for the B.S. degree, students must fulfill requirements established by the Faculty of the College of Agriculture and Life Sciences and administered through the Office of Instruction. Specifically, these are as follows:

Residence

Eight terms of residence are required. The last 30 credits must be earned in residence at the College of Agriculture and Life Sciences. A minimum of 120 semester credits is also required, of which at least 60 must be earned at Cornell. The student's cumulative and last-semester average must be 1.70 or above.

Courses

Course credits must fall within the following pattern:

Distribution — 45 credits

Physical sciences — 9 credits, including 6 credits of chemistry or physics or math

Biological sciences — 9 credits, including 6 credits of introductory biology

Social sciences and humanities — 9 credits in at least two subject areas

Oral and written expression — 9 credits, including 6 credits of written expression

Statutory College Electives — 55 credits minimum

At least 45 credits must be from courses taught in the College of Agriculture and Life Sciences.

Specialization within one of the following nine program areas should be planned in consultation with a faculty adviser. More detailed information about requirements and specializations within the areas may be obtained from the program coordinator:

Agricultural and biological engineering	D. Ludington
Animal science	R. Natzke
Applied economics and business management	D. Goodrich
Behavioral and social sciences	J. Bail
Biological sciences	S. Zahler
Environmental studies	J. Peverly
Food science	J. Sherbon
Plant sciences	P. Arneson
General studies in agriculture and life sciences	H. Wardeberg

Other Electives — 20 credits maximum

These may be taken in any college at Cornell to complete the degree requirements.

Other Requirements

Work experience is required in some, but not all, program areas. Students should consult their advisers for information.

Two terms of **Physical Education** are required by University legislation.

Progress of each student toward meeting graduation requirements is recorded by the college registrar on a Summary of Record form. It is the responsibility of the student and the faculty adviser to make certain that satisfactory progress is being made toward completion of the requirements.

Honors

Bachelor of Science With Distinction The degree of Bachelor of Science With Distinction will be conferred upon those students who, in addition to having completed all of the requirements for the Bachelor of Science degree, have done all of their undergraduate work at Cornell and have

cumulative averages of B+ (3.3 quality points) or above; and upon those transfer students who have been in residence for at least two years and have cumulative averages of A– (3.5 quality points) or above at Cornell.

Bachelor of Science With Honors Students who have a cumulative grade point average of 3.0 after having completed 55 semester credits of which at least 30 credits have been at Cornell, are eligible to apply to the Honors Program. A major part of the Honors Program involves independent research under the direction of a faculty member. Students who are interested in this program should talk to their faculty adviser early in the junior year.

Bachelor of Science With Distinction and Honors Students who meet the requirements of both programs above will be graduated with Distinction and Honors.

Dean's List Excellence in scholarship is recognized twice a year by publishing as a Dean's List the names of those students who have completed at least twelve credits of course work for letter grades, who are in good standing, and whose semester averages in academic courses are B+ (3.3 quality points) or above.

Agricultural and Biological Engineering

Agricultural and biological engineering links the traditional engineering disciplines with the biological, social, and agricultural sciences. Students choose either an engineering or technology specialization.

The engineering specialization is jointly administered by the New York State College of Agriculture and Life Sciences and the College of Engineering. The student enrolls in the College of Engineering for the fourth year and, after completing 126 credits, receives a Bachelor of Science degree from the College of Engineering.

Students who complete the technology specialization receive a Bachelor of Science degree from the College of Agriculture and Life Sciences after completing 120 credits.

The Department of Agricultural Engineering at Cornell is one of the leading departments of its kind in the world. There are twenty-eight faculty members involved in teaching, extension, and research. Riley-Robb Hall, the home of agricultural engineering at Cornell, houses one of the most complete agricultural engineering facilities in the United States.

Animal Sciences

In the animal sciences program the basic and biological sciences are applied to the animal industries to increase the supply of food and other products by animals. Through the combined efforts of the departments of Animal Sciences and Poultry Science, the students in this program area study the breeding, care, and production of dairy and beef cattle, horses, poultry, pigs, and sheep.

In animal sciences students study both basic and applied courses and with their advisers develop a curriculum program that may include courses in animal nutrition, animal breeding and genetics, animal physiology, meat science, dairy cattle, and livestock and poultry production.

Students wanting to enter a veterinary college or a graduate school take a science-oriented program with courses in chemistry, physics, biochemistry, microbiology, and mathematics in addition to the courses offered in the animal sciences program area.

The animal sciences program provides excellent facilities for housing animals and modern, well-equipped laboratories and classrooms. Many species of animals are used for study and research including dairy and beef cattle, horses, sheep, swine, chickens, turkeys, ducks, mink, dogs, rabbits, rats, hamsters, guinea pigs, and turtles.

Applied Economics and Business Management

Agriculture, the food industry, and natural resources development can significantly influence the national economy. Rapid changes in these areas often create economic problems. Persons trained in applied economics and business management in the Department of Agricultural Economics are equipped to help solve these problems.

In applied economics and business management, six specializations are open to the student: 1) business management and marketing, 2) farm business management and finance, 3) food industry management, 4) public affairs management, 5) resource economics, and 6) agricultural economics. The department's course offerings are supplemented with others in related areas at Cornell such as economics, rural sociology, animal science, government, industrial and labor relations, hotel administration, consumer economics, vegetable crops, natural resources, mathematics, and statistics.

Students with outstanding academic records may apply to register in both the College of Agriculture and Life Sciences and the Graduate School of Business and Public Administration in their senior year in order to receive a master's degree at the end of the fifth academic year.

Behavioral and Social Sciences

The behavioral and social sciences (BASS) program area focuses on people: how they behave, how they communicate, and how they learn and change. Knowledge about people can be used to help increase food production in a developing country, to encourage natural resource conservation, to show an advertiser how to reach an audience effectively, to help an adult learn to read, or to develop more effective community governments.

The three departments in the Bass program are Communication Arts, Education, and Rural Sociology. In communication arts students learn to communicate effectively by studying communication theory, broadcasting, advertising, mass media, and writing. In education students prepare to teach agriculture, work in environmental or science education centers, or study the educational process. In rural sociology students study the social forces affecting national and international development, and how groups work in rural societies.

A fourth option available in the program is the general BASS specialization for students wanting a strong multidisciplinary background. For example, a student preparing for rural community development work might emphasize both organizational and educational processes.

Most BASS students take a common core of three courses: introductory psychology, introduction to sociology, and the

theory of human communication. Students can then develop their own programs with course work from the three BASS departments and from other University departments including Sociology, Psychology, and Human Development and Family Studies.

On-campus facilities include computer centers, a curriculum laboratory, newspapers, journals, a radio station, and a photo laboratory. Students work on individual projects with professors or other professional staff members. Students also participate in community organizations and agencies such as 4-H, Youth Bureau, and YMCA. Around the state, environmental centers, government agencies, and selected schools cooperate in providing additional work-study opportunities.

Biological Sciences

Biology has become an extremely popular subject at many universities for a variety of reasons: it is a science that is in an explosive phase of exciting development; it prepares students for careers in challenging and appealing areas such as human and veterinary medicine and environmental sciences; and it deals with the inherently interesting questions of understanding ourselves and the living world around us. Many of the decisions we face today deal with the opportunities and problems that biology has put before us.

At Cornell the program of study in biology is offered by the Division of Biological Sciences to the students enrolled in either the College of Agriculture and Life Sciences or the College of Arts and Sciences.

The biology program is designed to enable students to acquire necessary scientific foundations, to become familiar with different aspects of modern biology, and to then concentrate in a specific area of biology: animal physiology and anatomy; biochemistry; botany; cell biology; ecology, systematics, and evolution; genetics and development; or neurobiology and behavior. Special programs are available for qualified students with particular interest in areas such as marine biology, nutrition, or biophysics. For more detail, see Division of Biological Sciences, p. 91.

Microbiology

Microbiology is a specialization for students who are interested in the basic nature of microorganisms or who may want to use their knowledge in some of the many applications of microbiology. The microbiology program provides training for technical positions in microbiology or preparation for graduate work in theoretical and applied aspects of the science such as food, medicine, ecology, industry, and agriculture.

For a limited number of students who are selected for the clinical microbiology specialization, the senior year may be spent at Cornell Medical College and the New York Hospital or at another affiliate.

Environmental Studies

The study of the environment and man's interaction with it is a vigorous and challenging area. The strategy for developing reasonable solutions to environmental problems requires a strong base of scientific, ecological, and technical knowledge, the ability to understand the natural environment, and the ability to estimate the effect of man's interaction with the environment. New tools and techniques, borrowed from all science and technology, are being applied to the solution of environmental problems.

Study in this area includes atmospheric science, wildlife and terrestrial science, fishery and aquatic science, entomology, landscape architecture, soil science, and natural resource conservation.

Food Science

The food science program area is designed to provide students with basic skills and the knowledge necessary to ensure an adequate food supply. Students in the food science program may select from the following three specializations: general food science, food analysis, and food technology and management.

The general food science curriculum is designed for those wishing to obtain a broad background in basic sciences plus specialized training in food science. The food analysis curriculum provides training in basic analytical methods and in specialized techniques for determining the nutritive, microbiological, chemical, and physical properties of foods. The food technology and management curriculum is intended for those interested in the technological and management aspects of food processing. This curriculum includes introductory science courses and specialized training in processing, management, and economics.

Plant Sciences

Plants supply both man and animals with food. They provide raw material for many industries, beautify the environment, and combat pollution. While the land available for plant production is relatively constant, the demands for plants and plant products increases as the world population grows. Consequently, the efficient production, processing, and marketing of plants is essential.

Plant science students may specialize in general plant science, plant breeding, plant pathology, plant protection, field crops, floriculture and horticulture, pomology, and vegetable crops. Students with well-defined interests may specialize when they enter the College. Others can start in the general plant sciences curriculum and, if desired, specialize after the second year.

General Studies in Agriculture and Life Sciences

Some students are interested in pursuing a broad general education in agriculture and the life sciences. Others are interested in developing a specialized interest, while still others are uncertain about their career objectives. Such students plan a course of study suited to their individual interests, abilities, and objectives under faculty advisement. Also, independent study of specialized curricula not covered by any existing program area can be planned in consultation with a faculty adviser.

General Agriculture

General agriculture and agricultural science students, with help from their adviser, will select a diversity of agricultural elective courses to provide a broad background of agricultural experience. Minimum course and distribution requirements for general agriculture are those required of all students in the College. General agriculture students ordinarily concentrate on production and technical

courses or may choose from advanced courses in the basic sciences.

International Agriculture

The specialization in international agriculture is intended to provide students with an understanding of the special problems of applying basic knowledge to the processes of agricultural modernization in low-income countries. The student will typically specialize in a subject matter field and work with an adviser to plan a program oriented toward international agriculture. The courses for secondary specialization in international agriculture are designed to acquaint students with the socioeconomic factors in agricultural development, with the physical and biological nature of tropical agriculture, with a foreign language, and with various world areas for which study programs exist.

Nutritional Sciences

The Division of Nutritional Sciences is an intercollege unit, administered jointly by the College of Human Ecology and the College of Agriculture and Life Sciences. The division coordinates and unifies undergraduate teaching, graduate training, research, and extension activities related to nutritional sciences. Students in the College of Agriculture and Life Sciences may develop a nutritional science concentration through the general studies program.

Nutritional sciences deals with the interrelationships of food, nutrition, and health. World and national problems in the field range from hunger and malnutrition to overnutrition. The study of nutrition involves understanding everything from basic biochemical processes of cellular metabolism to the societal significance of food. Students wishing to develop a concentration in nutritional science take courses in the physical and biological sciences, in human nutrition and food, and in social and behavioral sciences. See Division of Nutritional Sciences section on pp. 132.

Statistics and Biometry

Statistics is concerned with the study, development, and application of design and measurement aspects of an investigation, with the summarization of facts from the data obtained and with inferences made from the facts. Biometry is concerned with the application of techniques of the mathematical sciences to biological phenomena and problems. Students with competence and interest in mathematics, with ability in high-speed computer programming, and who have a certain amount of creativeness and ingenuity, will find this a challenging specialization.

Statisticians and biometricians may do mathematical research, teach, consult in academic and industrial research, do statistical computing with high-speed computers, or engage in operations research, quality control, and systems analysis. Data collection and summarization is an increasingly important function of state and national government bureaus such as the Census Bureau and the Bureau of Labor Statistics.

Graduate study and job opportunities are abundant in this area, salaries are excellent, and many opportunities for self-employment are available.

Overseas Academic Programs

Several opportunities for study abroad are coordinated with the College of Agriculture and Life Sciences. These opportunities offer students a broadened educational program, a multicultural perspective, and possible new avenues of career development. Among the available study-abroad programs are two student exchange programs with universities in Mexico and Sweden. Cooperative arrangements with the University of Reading in England and the University of Dublin in Ireland have enabled the College to endorse several students for a year of study under a tutor in those schools. Credit received for academic work at any of these schools may be transferred to meet graduation requirements at Cornell in the normal time period.

Mexican Exchange Program

A College student is competitively selected in the freshman year to go to the Instituto Tecnologico y de Estudios Superiores de Monterrey during the junior year. The sophomore year is used to attain proficiency in the Spanish language. Scholarship assistance from Monterrey and Cornell provides a substantial portion of the costs of the program. A student from Monterrey attends Cornell University under similar arrangements each year.

Swedish Exchange Program

The student selected to participate in the Swedish Exchange Program applies for it in the sophomore year and spends the junior year at the Agricultural College of Sweden at Uppsala. All essential expenses in Sweden, including a living allowance, are provided by a student group there. Round-trip air transportation must be paid by the exchange student. A student from the Agricultural College in Uppsala spends a year at Cornell University with support from the College and student groups here.

Year Abroad in England

The College has an arrangement with the University of Reading whereby a few students are recommended to the faculty for admission for one year as occasional students. Students go in their junior year. All expenses are paid by the student, but total costs including transportation are less than at Cornell.

Year Abroad in Ireland

For College students with majors in the biological sciences, a special year-abroad program has been established with the University of Dublin (Trinity College) in Irleand. A small number of Cornell students in genetics, microbiology, and biochemistry participate in the program each year. The program is similar to the Reading program with respect to finances.

Students interested in these or other year-abroad programs may obtain additional information from the Program in International Agriculture, 252 Roberts Hall.

Faculty

Agricultural Economics

O. D. Forker, chairman; D. J. Allee, R. D. Aplin, R. Barker, S. L. Barraclough, N. L. Bills, D. Blandford, R. N. Boisvert, C. A. Bratton, E. H. Brown, M. E. Brunk, J. B. Bugliari, D. L. Call, G. L. Casler, L. D. Chapman, H. E. Conklin, G. J. Conneman, J. Conrad, L. M. Day, W. G. Earle, D. U. Fisher, D. K. Freebairn, G. A. German, D. C. Goodrich, Jr., R. B. How, R. J. Kalter, W. A. Knoblauch, E. L. LaDue, W. H. Lesser, J. F. Metz, Jr., R. A. Milligan, T. D. Mount, T. T. Poleman, K. L. Robinson, D. G. Sisler, R. S. Smith, B. F. Stanton, R. P. Story, J. A. Sweeney, W. G. Tomek, G. B. White

Agricultural Engineering

N. R. Scott, chairman; L. D. Albright, R. D. Black, J. K. Campbell, J. R. Cooke, E. O. Eaton, E. W. Foss, R. B. Furry, W. W. Gunkel, R. W. Guest, D. A. Haith, W. W. Irish, L. H. Irwin, W. J. Jewell, F. G. Lechner, G. Levine, R. C. Loehr, H. A. Longhouse, R. T. Lorenzen, D. C. Ludington, E. D. Markwardt, W. F. Millier, R. A. Parsons, D. R. Price, G. E. Rehkugler, J. W. Spencer, T. S. Steenhuis, M. F. Walter

Agronomy

R. F. Lucey, chairman; M. Alexander, W. H. R. W. Arnold, D. R. Bouldin, W. B. Duke, J. M. Duxbury, G. W. Fick, D. L. Grunes, W. K. Kennedy, W. R. Knapp, J. Kubota, D. J. Lathwell, E. R. Lemon, A. C. Leopold, D. L. Linscott, M.B.McBride, R. D. Miller, R. B. Musgrave, R. L. Obendorf, G. W. Olson, J. H. Peverly, W. S. Reid, T. W. Scott, R. R. Seany, T. R. Sinclair, P. L. Steponkus, E. L. Stone, F. N. Swader, A. Van Wambeke, R. M. Welch, M. J. Wright

Atmospheric Sciences: B. E. Dethier, W. W. Knapp, A. B. Pack, D. A. Paine

Animal Sciences

Animal Science: R. J. Young, chairman; H. R. Ainslie, B. J. Apgar, W. F. Brannon, W. R. Butler, L. E. Chase, J. M. Elliot, R. W. Everett, R. H. Foote, D. G. Fox, R. C. Gorewit, W. Hansel, H. F. Hintz, D. E. Hogue, R. E. McDowell, W. G. Merrill, R. P. Natzke, E. A. Oltenacu, P. A. Oltenacu, W. G. Pond, R. L. Quaas, J. T. Reid, S. W. Sabin, H. F. Schryver, S. T. Slack, D. R. Smith, C. J. Sniffen, J. R. Stouffer, M. L. Thonney, H. F. Travis, D. R. Van Campen, N. L. VanDemark, P. J. Van Soest, L. D. VanVleck, R. G. Warner

Poultry Science: M. L. Scott, chairman; R. E. Austic, R. C. Baker, A. Bensadoun, S. E. Bloom, G. F. Combs, Jr., D. L. Cunningham, R. R. Dietert, H. G. Ketola, C. E. Ostrander, J. M. Regenstein, E. A. Schano, A. van Tienhoven

Biological Sciences

See p. 91.

Communication Arts

C. H. Freeman, chairman; N. E. Awa, J. A. Barwind, M. J. Barwind, R. D. Colle, R. H. Crawford, B. O. Earle, J. E. Hardy, J. E. Lawrence, D. Martin, R. D. Martin, T. M. Russo, R. E. Shew, V. R. Stephen, W. B. Ward, S. A. White, A. M. Wilkinson

Education

G. W. McConkie, chairman; H. G. Andrus, J. P. Bail, A. L. Berkey, G. J. Broadwell, R. L. Bruce, H. R. Cushman, W. E. Drake, J. A. Dunn, A. R. Edsall, J. R. Egner, R. B. Fischer, H. A. Geiselmann, D. B. Gowin, E. J. Haller, D. E. Hedlund, J. Millman, J. D. Novak, W. J. Pauk, G. J. Posner, R. E. Ripple, V. N. Rockcastle, K. A. Strike, H. L. Wardeberg

Entomology

E. H. Smith, chairman; C. O. Berg, W. L. Brown, Jr., E. W. Cupp, J. E. Dewey, G. C. Eickwort, P. P. Feeny, J. G. Franclemont, G. G. Gyrisco, H. H. Hagedorn, R. G. Helgesen, W. T. Johnson, J. P. Kramer, R. A. Morse, A. A. Muka, L. L. Pechuman, D. Pimentel, E. M. Raffensperger, R. B. Root, E. T. Schmidtmann, M. Semel, M. J. Tauber, W. M. Tingey, C. F. Wilkinson, R. G. Young

Floriculture and Ornamental Horticulture

C. F. Gortzig, chairman; A.Bing, J. W. Boodley, A. M. Elliot, C. C. Fischer, R. T. Fox, G. L. Good, R. J. Lambert, R. W. Langhans, A. S. Lieberman, R. G. Mower, E. F. Schaufler, J. G. Seeley, H. B. Tukey, Jr.

Landscape Architecture: M. I. Adleman, E. J. Carter, R. L. Dwelle, T. H. Johnson, A. S. Lieberman, L. J. Mirin, P. J. Trowbridge

Food Science

J. E. Kinsella, chairman; R. C. Baker, D. K. Bandler, H. F. DeGraff, T. W. Downes, D. C. Graham, L. F. Hood, W. K. Jordan, F. V. Kosikowski, R. A. Ledford, F. W. Liu, R. P. March, N. N. Potter, J. M. Regenstein, G. E. Rehkugler, J. W. Sherbon, W. F. Shipe, Jr., J. R. Stouffer, G. H. Wellington, R. R. Zall

Microbiology

R. P. Mortlock, chairman; E. A. Delwiche, N. C. Dondero, E. P. Greenberg, C. M. Rehkugler, H. W. Seeley, P. J. VanDemark

Natural Resources

W. H. Everhart, chairman; R. A. Baer, H. B. Brumsted, J. W. Caslick, R. J. Gutiérrez, L. S. Hamilton, E. E. Hardy, J. W. Kelley, J. P. Lassoie, R. A. Malecki, R. J. McNeil, A. N. Moen, R. R. Morrow, Jr., J. G. Nickum, R. T. Oglesby, M. E. Richmond, C. L. Schofield, D. A. Webster, B. T. Wilkins, W. D. Youngs

Nutritional Sciences

See p. 132.

Plant Breeding and Biometry

R. L. Plaisted, chairman; R. E. Anderson, R. S. Chaleff, L. V. Crowder, H. L. Everett, V. E. Gracen, Jr., P. Gregory, C. C. Lowe, H. M. Munger, R. P. Murphy, W. D. Pardee, O. H. Pearson, H. M. Schaaf, R. R. Seaney, D. H. Wallace

Statistics and Biometry: F. B. Cady, W. T. Federer, D. S. Robson, S. R. Searle, D. L. Solomon

Plant Pathology

D. F. Bateman, chairman; J. R. Aist, P. A. Arneson, S. V. Beer, C. W. Boothroyd, B. B. Brodie, R. S. Dickey, W. E. Fry, M. B. Harrison, R. K. Horst, G. W. Hudler, H. W. Israel, E. D. Jones, R. P. Korf, J. W. Lorbeer, W. F. Mai, R. L. Millar, P. C. O'Brien, W. F. Rochow, O. E. Schultz, A. F. Sherf, W. A. Sinclair, R. W. Smiley, H. D. Thurston, H. D. VanEtten, R. W. Wilkinston, O. C. Yoder, M. Zaitlin

Pomology

W. J. Kender, chairman; G. D. Blanpied, L. L. Creasy, J. N. Cummins, L. J. Edgerton, D. C. Elfving, F. W. Liu, G. H. Oberly, D. K. Ourecky, L. E. Powell, N. J. Shaulis, J. P. Tompkins

Rural Sociology

E. Walter Coward, Jr., chairman; M. L. Barnett, W. W. Bauder, F. H. Buttel, H. R. Capener, J. M. Cohen, G. J. Cummings, P. R. Eberts, E. C. Erickson, J. D. Francis, M. K. Miller, J. C. Preston, B. M. Scott, F. W. Young

Vegetable Crops

R. D.Sweet, chairman; E. E. Ewing, J. R. Hicks, W. C. Kelly, P. M. Ludford, P. L. Minotti, H. M. Munger, R. F. Sandsted, R. Sheldrake, Jr., L. D. Topoleski, D. H. Wallace

College of Architecture, Art, and Planning

Administration

Kermit C. Parsons, Dean

Alexander Kira, Associate Dean for Administration and Student Records

Charles W. Pearman, Associate Dean for Admissions and Financial Aid

Henry W. Richardson, Associate Dean for Minority Student Affairs (on leave 1978–79)

Allan A. Lentini, Director of Administrative Services

M. Sophie Newhart, Registrar

Betty Gangle, Accountant

Margaret Webster, Slide Curator

Faculty Advisers

Freshmen are assigned faculty advisers for their first year and are also invited to share their concerns and seek advice from the volunteer student advisers at any time.

Upperclass students will have no regular advisers assigned and are free to seek assistance and advice from the most appropriate faculty member or college officer.

Specific inquiries regarding rules, procedures, or deadlines should be addressed to:

Professor Kira, Associate Dean for Administration and Student Records

Professor Pearman, Associate Dean for Admissions and Financial Aids

Professor Richardson, Associate Dean for Minority Affairs (on leave 1978–79)

Ms. S. Newhart, College Registrar

Professor Schack, Chairman, Department of Architecture

Professor Blum, Chairman, Department of Art

Professor Saltzman, Chairman, City and Regional Planning

Degree Programs

	Degree	*HEGIS Code*
Architecture	B.Arch	0202
City and Regional Planning	B.S.	0206
Design Communication	B.F.A.	0299
Fine Arts	B.F.A.	1002
History of Architecture and Urban Development	B.S.	0202
Policy Planning and Regional Analysis	B.S.	0206
Urban Planning and Development	B.S.	0206

The College offers programs leading to the bachelor's degree — the five-year program in architecture leads to the Bachelor of Architecture; four-year programs in art and architecture lead to the Bachelor of Fine Arts; and a four-year program with a concentration in city and regional planning leads to the Bachelor of Science.

The College offers graduate-level programs in: art, architectural design and urban and regional design, architectural sciences, history of architecture and urban development, preservation planning, city and regional planning and related programs, and landscape architecture.

Students in each of these programs, working in physical proximity to one another, gain a broader understanding of their own special area of interest through close contact with the students and teachers in other disciplines.

Early in its development, the College set a limit to the number of its students and devised a selective method of admission. It now enrolls over 650 students and has a full-time teaching staff of over sixty, supplemented by visiting teachers, part-time lecturers, and assistants. Teachers and students mix together freely and much instruction and criticism is on an individual basis.

The College's courses are parts of professional curricula with fundamental subjects given within the College by a faculty reflecting professional points of view. This professional concentration of courses within the College is balanced by the breadth of view gained from courses and informal learning in the rest of the University. The College is convinced that this breadth is an essential element of professional education. This conviction is evident in the form of the curriculum, the methods of teaching, and the extracurricular life of teachers and students.

Facilities

Buildings

The College occupies Sibley Hall, Franklin Hall, part of Rand Hall, and the Foundry. In Sibley are the facilities for architecture and city and regional planning as well as the administrative offices and the Fine Arts Library. The Department of Art is housed in Franklin Hall. Sculpture and shop facilities are in the Foundry. The Green Dragon, a student lounge, is located in the basement of Sibley Hall. The College has three darkrooms which are available for general use as well and serve as photo labs for the photography courses. A darkroom fee must be paid by each user. Information about rules and regulations, darkroom hours, and equipment is available in the slide library.

Through the generosity of the late Mrs. Lillian P. Heller, the College has acquired the home of William H. Miller, the first student to enroll for the study of architecture at Cornell and later a practicing architect in Ithaca. This building is used to house visiting teachers and guests of the College and for occasional receptions and social events.

Libraries

The Fine Arts Library in Sibley Dome serves the College of Architecture, Art, and Planning through its collections on architecture, fine arts, and city and regional planning. A library of over 93,000 books, it is capable of supporting undergraduate, graduate, and research programs. Some 1,600 serials are currently received and maintained.

The College maintains in Sibley Hall a slide library containing extensive files of slides of architectural history and a large and growing collection of slides of art and architecture from all parts of the world. The library now includes approximately 185,000 slides.

The facilities of the libraries of other schools and departments on campus and the Olin Library, designed primarily as a research library for graduate students, are also available.

Museums and Galleries

The Herbert F. Johnson Museum of Art was formally opened in May 1973. Although many of its exhibitions and activities relate directly to academic programs of the University, the museum has no administrative affiliation with any department. In this way, its programs cut freely across academic boundaries, stimulating interchange among disciplines. With a strong and varied collection and a continuous series of high-quality exhibitions, it fulfills its mission as a new center for the visual arts at Cornell. Art galleries are also maintained in Willard Straight Hall, where loan exhibitions of paintings and graphic work by contemporary artists are held. Current work of students in the College of Architecture, Art, and Planning is shown in the exhibition areas in Sibley Hall and the gallery in Franklin Hall.

Admissions

All candidates for admission to the College must take the Scholastic Aptitude Test of the College Entrance Examination Board or submit American College Testing Program scores. Entrance credit on the basis of the school record will be granted only in those subjects in which the candidate has attained the college-recommending mark of the school.

Three years of a foreign language, ancient or modern, are required for entrance. Candidates who have less than three years of preparation in a foreign language, but who make a satisfactory score on the Achievement Test of the College Entrance Examination Board may meet the requirement. When the required language credit is not offered for admission, a letter of explanation of this deficiency must be sent to the Committee on Admissions for its consideration. If the applicant is admitted, the language requirement must be satisfied before graduation. If an applicant plans to continue in college the study of a language already begun, the College advises the student to take the College Entrance Examination Board Achievement Test in that language, for placement in the proper course. Three college credits in a language are considered, for the purpose of making up the entrance requirement while in college, to be equivalent to one year of high school language credit.

Candidates for admission to the *Department of Architecture* must present sixteen units, including four units of English, four units of mathematics, and three units of foreign language (see above). Mathematics must include intermediate algebra, plane geometry, and trigonometry, taken either as separate courses or included within comprehensive mathematics courses. An acceptable course in physics, taken either in secondary school or in college, is required for graduation.

The program in architecture is professional in its objectives. Only those who are seriously interested in careers in architecture should make application for admission. Candidates for admission are advised to read professional literature, visit professional offices, talk with students of architecture or recent graduates, and otherwise inform themselves about the field. It is usually wise to resolve serious doubts by starting with a program of general education.

Candidates for admission to the *Department of Art* should present sixteen units, including four units of English, two units of college preparatory mathematics, and three units of foreign language (see above). Remaining units should, in the main, consist of science and social studies (including history).

The program in art is preprofessional in objective. Those who are seriously interested in careers in painting, sculpture, or the graphic arts are the most logical candidates. Candidates for admission are advised to read art criticism and art history, to visit museums and galleries, and to otherwise inform themselves about the field of art. Art work done by the applicant, or slides thereof, should be presented at the time of the interview. Examples of class assignments, or independent work, or both, are acceptable. Prospective students who live outside the radius of the Boston-New York-Ithaca areas and cannot travel for personal interviews may write to the Department of Art to arrange for an interview with a Cornell graduate who lives in the prospective student's part of the country and in addition send to the Department of Art one unmatted 9″ × 12″ self-portrait in pencil, exactly ten selective slides of their work, and a brief statement of professional interest and purpose.

Transfer Students

A student who has already attended another institution of collegiate rank is admitted at the beginning of the fall term. Transfer applications are available from the Office of Admissions, 410 Thurston Avenue, Ithaca, New York 14853. The applicant is required to meet all entrance requirements and to comply with the rules governing admission. In addition, the applicant should file with the Office of Admissions an official transcript of record of work at the institution already attended, together with a certificate of honorable dismissal. The applicant should be prepared to send, if requested, a catalog of that institution, marking the courses taken as listed in the transcript. The Scholastic Aptitude Test of the College Entrance Examination Board is required.

Special Students

A person, especially one of comparative maturity, may, in certain circumstances, even without satisfying the entrance requirements, be admitted as a special student not a candidate for a degree. Applicants must give evidence of ability to do creditable work in the College, and their applications for admission must be recommended by the department in which they propose to do the main part of their work. They must file applications with the Office of Admission, 410 Thurston Avenue.

If a person admitted as a special student without satisfying the entrance requirements subsequently satisfies those requirements, he or she may be graduated under the ordinary regulations of the College.

College Academic Policies

Ownership of Student Work

All drawings, models, paintings, graphic art, and sculpture done in the studios and drafting rooms as a part of the instructional program are the property of the College until they have been graded and released by the instructor. Certain works may be selected by the College for retention for academic purposes.

Exhibitions of Student Work

Exhibitions of student work will be held each term as part of the yearly schedule of the Franklin Hall and Sibley Dome Galleries. These may display the work of a specific course or exhibit examples of the best recent work done.

Scholastic Standards

Term by term, a candidate for an undergraduate degree in this College is required to pass all courses in which the student is registered and have a weighted average for the term of not less than "C" (2.0). The record of each student who falls below the standard will be reviewed by the Student Records Committee for appropriate action, as described below:

1) *Warning* — This means that the student's performance is not up to expectations. Unless improvement is shown in the subsequent term, the student may be placed on final warning or may be suspended.

2) *Final Warning* — This indicates that the student's record is unsatisfactory. Unless considerable improvement is shown in the subsequent term, the student is subject to dismissal from the College.

3) *Suspended: Academic Deficiency* — The student is dismissed from the College and may not continue his studies in the College. A student who has been suspended may apply for readmission after an absence of at least two semesters. Application for readmission is made by letter addressed to the Associate Dean of Admissions, College of Architecture, Art and Planning. The student must submit evidence that his other time has been well spent since suspension, and, if employed, must submit a letter from immediate superiors. Readmission to the College after being suspended is at the discretion of the Admissions Committee.

4) *Dismissed: May Not Reregister, College of Architecture, Art, and Planning* The student is dismissed from the College and is permanently prohibited from continuing studies in it. It does not preclude the possibility of applying for admission to another division of the University.

The above actions are not necessarily sequential. A student who has received a warning, may be suspended for academic deficiency at the end of the next term if the performance during that term is deemed to be grossly deficient.

It is necessary to have a cumulative average of at least 1.7 (C−) for graduation.

Architecture

Professional Degree Program

The first professional degree in architecture is the Bachelor of Architecture. This degree counts towards the professional registration requirements established by the various states and the National Council of Architectural Registration Boards. The professional program is normally five years in length and is designed particularly for those who have identified before matriculation their interest and motivation to enter the field. It therefore incorporates both a general and professional educational base.

The program is strongly oriented towards developing the student's ability to deal creatively with architectural problems on analytical, conceptual, and developmental levels. The sequence courses in design, consisting of studio work augmented by lectures and seminars dealing with theory and method, are the core of the program. Sequences of studies in human behavior, environmental science, structures, and building technology provide a base for the work in design.

In the first two years, the student has the opportunity to establish a foundation in the humanities and sciences through electives. During the fourth and fifth years, this base may be extended and applied by further studies in these areas. Within the professional program, the basis is established for understanding architecture in its contemporary and historical cultural context.

The structure of the program incorporates considerable flexibility for the individual student to pursue his or her particular interest in the fourth and fifth years. By planning options and electives in the fifth year, it is possible for a qualified student to apply the last year's work toward the Bachelor of Architecture degree to one of the graduate programs offered in the department, with the possibility of completing the requirements for the master's degree in a minimum of one additional year.

Curriculum

First Year

Fall Term	*Credits*
101 Design I	3
131 Introduction to Architecture	2
141 History of Architecture	3
151 Design Fundamentals I	2
191 Analytical Drawing I	2
Elective (out of College)	3
	15

Spring Term	
102 Design II	3
142 History of Architecture	3
152 Design Fundamentals II	2
162 Introduction to Social Science in Design	2
192 Analytical Drawing II	2
Elective (out of College)	3
	15

Second Year

Fall Term	
201 Design III	4
221 Mathematical Techniques	3
231 Architectural Elements and Principles	3
261 Introduction to Environmental Science	2
Elective (in College)	3
Elective (out of College)	3
	18

Spring Term	*Credits*
202 Design IV	4
222 Structural Concepts	4
232 Design Methods and Programming	3
262 Building Technology, Materials, and Methods	3
Elective (out of College)	3
	17

Third Year

Fall Term	
301 Design V	6
321 Structural Systems I	3
361 Environmental Controls I	2
Elective (in department)	3
Elective (out of College)	3
	18

Spring Term	
302 Design VI	6
322 Structural Systems II	3
362 Environmental Controls II	2
Elective (in department)	3
Elective (out of College)	3
	17

Fourth Year

Fall Term	
401 Design VII	6
481 Professional Practice	2
Elective (in department)	3
Elective (in College)	3
Elective (out of College)	3
	17

Spring Term	
402 Design VIII	6
482 Professional Practice	2
Elective (in department)	3
Elective (in or out of College)	3
Elective (out of College)	3
	17

Fifth Year

Fall Term	
501 Design IX, 503 Design IX-Thesis I, or 601 Special Program	8 or 9
510 Thesis Introduction	2
630 Advanced Seminar in Architecture	1
Elective (in department)	3
Elective (out of College)	3
	17 or 18

Spring Term	
502 Design X-Thesis, 504 Design X-Thesis, or 602 Special Program	8 or 9
631 Advanced Seminar in Architecture	1
Elective (in department)	3
Elective (in or out of College)	3
Elective (in or out of College)	3
	18 or 19
Total credits	169

Elective Distribution Requirements

	Credits
In-department electives	18
In-College electives	6
In- or out-of-College electives	9
Out-of-College electives	27
Total electives	60

In-Department Elective Distribution Requirements	*Credits*
History of architecture courses	6
Principles, theories, and methods and nonsequence design courses	6
Design communications or computer graphics course	3
Architectural science course	3

In-College Elective Distribution Requirements	*Credits*
Art course	3
Planning course	3

Out-of-College Elective Distribution Requirements	*Credits*
Mathematics, physics, or biological science course	3
Humanities courses	6
Social science courses	6

Degree Option

After the completion of the first four years of credit requirements, the student can opt to receive the nonprofessional degree Bachelor of Fine Arts (B.F.A.) in architecture or Bachelor of Science (B.S.) in urban planning and development of policy planning and regional analysis.

Transfer Students

Although the program leading to the Bachelor of Architecture is specifically directed to those who are strongly motivated to begin professional studies when entering college, it is sufficiently flexible to allow admission of students who do not make this determination until after one or two years of college work. Transfer students are responsible for completing that portion of the curriculum which has not been covered by equivalent work.

If the applicant has had no previous work in architectural design, the ten-term design sequence must be completed. Since this sequence may be accelerated by attending summer terms, seven or eight normal terms and 2 or 3 summer terms are typically required.

For those who would benefit from an opportunity to explore the field of architecture before deciding on a commitment to professional education, the department offers an introductory summer program which includes an introductory studio in architectural design, lectures, and other experiences designed to acquaint the participants with opportunities, issues, and methods in the field of architecture.

A limited number of transfer applicants who have completed a portion of their architecture studies in other schools are offered admission. Each transfer case is individually considered. Transfer students must complete a minimum of four terms in residence and a minimum of seventy credits of which thirty-five must be taken in the Department of Architecture, including four terms of design. Placement in the design sequence is based on a review of a representative portfolio of previous work.

All transfer applicants are encouraged to visit the College and discuss their plans with a member of the Admissions Committee. Potential transfer applicants should contact the Undergraduate Admissions Secretary, College of Architecture, Art, and Planning, Cornell University, 129 Sibley Hall, Ithaca, New York 14853; telephone 607/256-4376.

Nonprofessional Alternative Programs

The first two years of the professional program are considered a basic introduction to the field. It is possible after this phase to depart from the professional program to develop a concentration in some area of the broader field without the intention of becoming a licensed practicing architect. A student choosing an undergraduate nonprofessional major should apply in writing by February 1 in the second year to the department chairperson. The student will be interviewed and informed about acceptance by March 1.

Programs developing major concentrations in the third and fourth years leading to the nonprofessional Bachelor of Fine Arts degree after the fourth year in design communications;* and to the Bachelor of Science degree in history of architecture and urban planning, urban planning and development, and policy planning and regional analysis. A student attaining either of these degrees can either terminate studies or apply to a graduate program in the area of concentration.

*Program temporarily suspended.

Archaeology

Undergraduate students may elect a concentration in archaeology, an interdisciplinary subject offered in a series of courses organized by the Archaeology Program (see Cornell University, Description of Courses). To qualify, students must complete the introductory course, Archaeology 100, with a grade of C or better and at least four advanced courses in archaeology, distributed among three groups: theory and interdisciplinary approaches, Old World archaeology, and New World archaeology. Students are encouraged to train as surveyors and apply for positions on archaeological field teams. Once involved in the archaeology program, a student is eligible for either the Jacob and Hedwig Hirsch or the A. Henry Detweiler travelling fellowship.

History of Architecture and Urban Development

The major in history of architecture and urban development is intended for undergraduate students interested in historical studies of architecture and planning offered in the context of a professional school. The program benefits from a tradition of pioneer work in the history of architecture and urban development that has grown at Cornell over the last thirty years. Special features of the new major are the availability of work in preservation planning and the architectural aspects of archaeology. Ten members of the College faculty offer courses appropriate for this major.

Admission to the Major

Architectural history and urban development may be elected as a major subject if a student has completed Architecture 141 and 142 with a grade of B or better. Others may petition for admission to the major.

Requirements

To satisfy the major subject requirement, a minimum of forty credits of history course work must be completed with a grade of C or better. Of these forty credits, twenty-six must be in architectural history and urban development with eight of these twenty-six credits obtained in courses above the intermediate level. In addition, eight credits must be obtained in related fields, such as history of art; archaeology; intellectual, cultural, or political history; and history of science.

Majors will be expected to meet the language requirement in the manner specified for students enrolled in the College of Arts and Sciences.

Honors Program

Students wishing to enroll in the honors program must indicate this intention in writing before the end of their junior year and be accepted for the program by the history of architecture faculty. Minimum requirements for admission to candidacy for honors are:

1) a cumultive average of B– or better in all courses;
2) a cumulative average of B or better in all history of architecture and urban development courses.

Honors candidates will take a four-credit research course in the fall of their senior year. In the spring there will be a four-credit session during which they will prepare and defend an architectural history presentation or demonstration, or a paper approximately fifty pages long.

Curriculum

Prerequisite: first two years of Bachelor of Architecture curriculum	*Credits* 70
Third Year, Fall	
Fine art elective	3
Related field courses	4
History of architecture (intermediate level) or history of urban development	4
Electives	4
	15
Third Year, Spring	
Related field courses	4
History of architecture (intermediate level) or history of urban development	4
Electives	8
	16
Fourth Year, Fall	
History of architecture (advanced level) or history of urban development	4
Honors or history related subject	4
Electives	8
	16
Fourth Year, Spring	
History of architecture (advanced level) or history of urban development	4
Honors or history-related subject	4
Electives	7
	15
Total	132

Design Communication*

The Design Communication Program has been formulated to prepare students with the skills and abilities to deal effectively with the complex possibilities presented by the new technologies in media communication forms. The program is directed toward an applied problem-solving approach to the design process in general, and to architecture in particular.

Admission to the Major

Entrance to the Design Communication B.F.A. Degree Program is open to students who have successfully completed the first two years of the architecture program, and who have a grade of B or better in Architecture 151 and 152. Others may petition for admission to the major.

Requirements

A minimum of forty-two credits of course work must be completed in the major field beyond the basic sequence courses with a grade of C or better. Twenty-four of the forty-two credits must be in design communication. The remaining eighteen credits must be obtained in related fields, such as fine arts, mass communication, perceptual psychology, lighting and acoustics, and the performing arts.

* Program temporarily suspended.

Curriculum

Prerequisite: first two years of Bachelor of Architecture curriculum	*Credits* 70
Third Year, Fall	
Design communication courses, 300 level	6
Related field courses	6
Electives	3
	15
Third Year, Spring	
Design communication courses, 300 level	6
Related field courses	6
Electives	3
	15
Fourth Year, Fall	
Design communication courses, 400 level	6
Related field courses	3
Electives	7
	16
Fourth Year, Spring	
Design communication courses, 400 level	3
Thesis project in design communication	6
Electives	7
	16
Total	132

City and Regional Planning

This program offers students completing their first two years in the undergraduate architecture program the opportunity to do additional work in planning during their third and fourth undergraduate years. It does not train students to be professional urban planners; the master's program in planning is intended for that purpose. The major is organized primarily to offer students coming from an architectural program an opportunity to redirect their academic training toward the understanding of urban and regional problems and their potential solutions.

Students doing additional work in planning may study in any one of several formal options or may work out a special program with a faculty adviser. Examples of special programs are exhibited below. Students completing the program should be well prepared to undertake graduate work in a variety of fields, such as urban design, landscape architecture, city and regional planning, public policy, or a number of the social science fields. They should also be well prepared to enter the field of planning as trainees or interns at various levels of government.

Admission

Students should indicate their interest in planning by the end of the spring term of their second year. They must be in good standing and approved by the CRP Committee on Undergraduate Programs.

Requirements and Program of Study

A minimum of 30 credits of course work in the Department of City and Regional Planning out of a total of 132 credits is required for the degree. The core is comprised of from 18 to 24 credits. Examples of possible programs follow.

Social Planning
Introduction to Urban and Regional Theory
Methods of Social Policy Planning
Theories and Strategies of Social Change
Introduction to Planning Theory
Social Science electives

Urban Environmental Policy Planning
Introduction to Urban and Regional Theory
Urban Economic Analysis
Regional Economic Development
Introduction to the History of Urban Planning
Engineering electives

Community Development Planning
Introduction to Urban and Regional Theory
Planning Analysis
Regional Economic Development
The Impact and Control of Technological Change
Field Studies in Planning
Social Science electives

Urban Planning History
Introduction to the History of Urban Planning
Design and Conservation
Seminar in American Urban History
Electives

Urban Development Process
Introduction to the History of Urban Planning
Urban Land-Use Planning
Suburbanization and Metropolitan America
Electives

A number of other independent programs can be developed.

Departmental Electives and Independent Study

A number of courses are specifically designated for undergraduates. Undergraduate students having the necessary prerequisites may be admitted, with the consent of the instructor, to the more advanced courses. In addition, a number of independent work courses are available for students interested in pursuing subjects of special interest to them.

Fieldwork

Students are encouraged to take fieldwork problems providing them with experience in dealing with the problems of Upstate communities. Credit can be awarded.

During the three-month summer period between the third and fourth years, the student is encouraged to gain the experience of an internship in city and regional planning. The field placement is generally in a planning agency or group and may be supervised by a faculty member. Credit may be awarded, if circumstances warrant.

Summer Term in Architecture

The summer term offers students the opportunity of a concentrated period of design work. Design is offered at both undergraduate and graduate levels; the term is six to eight weeks in duration.

Undergraduate design sequence courses are offered at second- through fifth-year levels in Ithaca. Normally, there is also a design program abroad for third-, fourth-, and fifth-year students.

Registration is limited to students in good standing who have completed the sophomore year of study. In exceptional cases a student who has completed only one year of study may be allowed to register.

Students from schools of architecture other than Cornell are invited to apply to the College for admission to all summer programs.

At the graduate level, the summer term is devoted to problems forming part of the student's program of work. The term may carry residence credit equal to that of a normal academic term. Participation in the program cannot be undertaken without the consent of the student's Special Committee.

Art

Undergraduate Program

The undergraduate curriculum in art, leading to the degree of Bachelor of Fine Arts, provides an opportunity for the student to combine a general liberal education with the studio concentration required for a professional degree. During the first year, all students follow a common course of study designed to provide a broad introduction to the arts and to provide a basis for the intensive studio experience in painting, sculpture, photography, and the graphic arts afforded in the last three years. In the third semester, students take either painting, sculpture, or photography and a required course in printmaking. Beginning with the fourth term, students concentrate on painting, sculpture, photography, or printmaking. They may elect additional studio work in any of these subjects during the last two years, with the consent of the instructor, providing the courses are taken in sequence and at the hours scheduled. These courses are designed to promote a knowledge and critical understanding of these arts and to develop the individual student's talent. All members of the faculty in the Department of Art are active practicing artists whose work represents a broad range of expression.

Studio courses occupy approximately one-half of the student's time during the four years at Cornell; the remainder is devoted to a diversified program of academic subjects with a generous provision for electives.

The curriculum in art is an independent program of studies within the College of Architecture, Art, and Planning. However, the intimate relationships between fine arts and training in architecture and city planning is a source of special strength in the Cornell program and affords unusual benefits to the students in these three disciplines.

Although the undergraduate curriculum in art is an excellent background for a career in applied art and offers courses in the use of graphics in modern communications, no specific technical courses are offered in such areas as interior design, fashion, or commerical art.

The department discourages the concept of accelerated graduation. However, a student may petition for consideration of early graduation upon the following terms and conditions: (1) The petition must be submitted to the faculty before preregistration in the spring semester of the

student's junior year; and (2) the student must have a cumulative average that places him or her in the first quarter of the class.

A candidate for the B.F.A. degree who wishes also to earn an A.B. degree from the College of Arts and Sciences can arrange to do so. This decision should be made early in the candidate's career (no later than the third semester) so that he or she can petition to be registered in both Colleges simultaneously, and an adviser in the College of Arts and Sciences can supply needed guidance. Those students who are interested primarily in the history rather than in the practice of art should apply for admission to the College of Arts and Sciences with the objective of doing major work in the Department of the History of Art in that college. They may take studio courses as electives in the Department of Art in the College of Architecture, Art, and Planning.

Curriculum

First Year

Fall Term	*Credits*
111 Introductory Art Seminar	1
151 Introductory Drawing	3
110 Color, Form, and Space	3
B.F.A. students must take one and may take both of the following courses:	
121 Introductory Painting	3
141 Introductory Sculpture	3
Out-of-college electives	0–3
	13–16

Spring Term	
152 Introductory Drawing	3
B.F.A. students must take two of the following three courses:	
122 Introductory Painting	3
142 Introductory Sculpture	3
161 Introductory Photography	3
Out-of-college electives	4–7
	13–16

Second Year

Fall Term	
251 Second-Year Drawing	3
131 or 132 Introductory Graphics (one term, fall or spring)	3
B.F.A. students must take two of the following three courses:	
221 Second-Year Painting	3
241 Second-Year Sculpture	3
261 Second-Year Photography	3
Electives	4–7
	13–16

Spring Term	
252 Second-Year Drawing	3
131 or 132 Introductory Graphics (one term, fall or spring)	3
B.F.A. students must take two of the following three courses:	
222 Second-Year Painting	3
242 Second-Year Sculpture	3
262 Second-Year Photography	3
Electives	4–7
	13–16

Third and Fourth Years

Students in the third and fourth years should plan their programs to complete twenty-eight credits in courses in one of the following studio areas: painting, sculpture, or graphics. Or, they should plan to complete twenty credits in each of two of the above areas. Students may also choose a course of study in photography up through the third-year level. Twelve additional credits in art history at the 200 level or higher or in architectural history must also be completed. Students are expected to take thirty-two credits in their third and fourth years respectively.

The B.F.A. program is designed so that students may fulfill the degree requirement of 129 credits with a minimum of 53 credits to be taken in the Department of Art and a minimum of 52 credits to be taken outside of the department. Within these ranges, students may design their own programs subject to the following limitations:

1) Of the minimum of 52 elective credits to be taken outside the Department of Art, four courses must be in English, history, or other humanities offered in the College of Arts and Sciences. Six credits in art history at the 200 level or higher or in architectural history must be completed in the first two years. Twelve additional credits in art history at the 200 level or higher or in architectural history must be completed in the last two years.
2) Of the minimum of 53 credits to be taken within the Department of Art, the following courses must be completed in the first two years: 110 Color, Form, and Space; 151–152 Introductory Drawing; 251–252 Second-Year Drawing; at least two of the following sequences: 121–122 Introductory Painting, 141–142 Introductory Sculpture, 161 or 162 Introductory Photography and 261 or 262 Second-Year Photography; and either 131 or 132 Introductory Graphics.

The University requirement of two terms in physical education must be met.

A candidate for the B.F.A. degree at Cornell is required to spend the last two terms of candidacy in residence at the University subject to the conditions of the Cornell Faculty Legislation of November 14, 1962.

Students who transfer into the undergraduate degree program in art must complete a minimum of four terms in residence at Cornell and a minimum of 60 credits at the University, of which 30 credits must be taken in the Department of Art, including four terms of studio work.

City and Regional Planning

Planning seeks to guide the development of the economic, social, natural, and built environments in order that some of the needs and aspirations of people may be better satisfied. Most of the activities in the department focus on a broad range of issues which are often subsumed under the labels urban, regional, or social policy planning. Urban planning is generally concerned with the urban environment, the physical facilities as well as social and economic forces that affect this environment, and the processes of urban plan making and administration. Regional planning is usually concerned with socioeconomic issues and functional planning at the regional level, the forces that generate economic growth and social development, and the ways in which resources

can best be used in regional development. Social policy planning is generally concerned with the social decision processes involved in both city and regional planning. There is clearly a considerable overlap among these three areas of professional and scholarly study, and the department encourages the integration of related planning activities.

The programs of study are primarily at the graduate level. For further information see the *Announcement of the College of Architecture, Art, and Planning*.

Landscape Architecture

In the Colleges of Architecture, Art, and Planning, and Agriculture and Life Sciences, the Landscape Architecture Program offers three professional degree alternatives: a two-year graduate program leading to a Master of Landscape Architecture degree, a three-year graduate program leading to a Master of Landscape Architecture degree, and a four-year undergraduate program leading to a Bachelor of Science degree (from the College of Agriculture and Life Sciences).

For further information see *Agriculture and Life Sciences at Cornell* and the *Announcement of the College of Architecture, Art, and Planning*.

Faculty

Architecture

Mario L. Schack, chairman
Peter M. Cohen
Ralph Crump
W. Wilson Cummer
Michael D. Dennis
Werner Goehner
Donald P. Greenberg
Keith H. Grey
Martin Harms
George Hascup
Lee H. Hodgden
Alexander Kira
Wojciech G. Lesnikowski
Robert D. MacDougall
Archie Mackenzie
John Miller
Leonard Mirin
Christian Otto
Charles W. Pearman
Henry W. Richardson
Maria Romanach
Colin Rowe
Francis W. Saul
John P. Shaw
David M. Simons
Stuart Stein
O. Mathias Ungers
J. Alan Wells

Art

Zevi Blum, chairman
Stanley Bowman
Victor Colby
Barbara P. Cooke
Norman D. Daly
Loretta Dunkelman
Kenneth Evett
Gillian Pederson-Krag
Steve Poleskie, acting chairman
Jason Seley
Arnold Singer
Jack L. Squier
Haim Steinbach
Phyllis Thompson
Visiting critics

City and Regional Planning

Sidney Saltzman, chairman
Richard S. Booth
Paul Brandford
Pierre Clavel
Stan Czamanski
Nancy Lynn Gilgosch
William W. Goldsmith
Keith H. Grey
Barclay G. Jones
David B. Lewis
Dorothy W. Nelkin
Kermit C. Parsons
John W. Reps
Stuart W. Stein
Ian R. Stewart

Landscape Architecture

Leonard Mirin

College of Arts and Sciences

Administration

Alain Seznec, Dean
Lynne S. Abel, Associate Dean
Geoffrey V. Chester, Associate Dean
Robert A. Scott, Associate Dean
Urbain J. DeWinter, Assistant Dean and Director of Admissions
Elaine J. Lefferts, Assistant Dean
Beatrice G. Rosenberg, Assistant Dean
Janice P. Turner, Assistant Dean
Margaret C. Unsworth, Assistant Dean
Lawrence Watson, Assistant Dean
Margery Clauson, Director of the Office of Records and Scheduling

Degree Programs

	Degree	*HEGIS Code*
Africana Studies	A.B.	2211
American Studies	A.B.	0313
Anthropology	A.B.	2202
Archaeology	A.B.	2203
Asian Studies	A.B.	0301
Biological Sciences	A.B.	0401
Biology and Society	A.B.	4999
Chemistry	A.B.	1905
Classical Civilization	A.B.	1504
Classics	A.B.	1504
College Scholar	A.B.	4901
Dance	A.B.	1008
Economics	A.B.	2204
English	A.B.	1501
French	A.B.	1102
Geological Sciences	A.B.	1914
German	A.B.	1103
German Area Studies	A.B.	0310
Government	A.B.	2207
Greek	A.B.	1504
Hebrew	A.B.	0399
History	A.B.	2205
History of Art	A.B.	1003
Independent Major	A.B.	4901
Italian	A.B.	1104
Latin	A.B.	1109
Linguistics	A.B.	1505
Mathematics	A.B.	1701
Music	A.B.	1005
Near Eastern and Biblical Civilizations	A.B.	0399
Near Eastern Languages and Literatures	A.B.	0399
Philosophy	A.B.	1509
Physics	A.B.	1902
Psychology	A.B.	2001
Russian	A.B.	1106
Russian & Soviet Studies	A.B.	0307
Social Relations	A.B.	2201
Sociology	A.B.	2208
Spanish	A.B.	1105
Theatre Arts	A.B.	1007

Introduction

The College of Arts and Sciences at Cornell is a liberal arts college, a university college, and a graduate school and research center. As a liberal arts college, it offers undergraduates the opportunity to increase their understanding of themselves and the world and prepares them for further, more specialized study.

As a university college, it is part of a wider university community which provides strength and diversity not available in an isolated, solely undergraduate institution. Here, students can draw upon the more highly specialized knowledge and facilities of the professional colleges to supplement their liberal studies. Because the College also serves students in other colleges of the University, its academic program is broad and flexible.

Finally, as a graduate school and research center, the College attracts faculty members whose active involvement in research and writing requires first-rate academic facilities, and whose energetic participation in undergraduate teaching brings to their students the most current and creative ideas in modern scholarship. It is this combination of functions that gives the College its distinctive character.

The Program of Study

The Arts College curriculum gives students opportunity for breadth, experiment, and discovery in study, and for focus on at least one field. To encourage students to take maximum advantage of the College's many offerings and programs, the College has set requirements in the following areas: (1) Freshman Seminars, (2) foreign language, (3) distribution, (4) the major, (5) electives, (6) residence, and (7) credit. These requirements provide the backbone of an undergraduate education in the College. Students must also complete a University physical education requirement.

Freshman Seminars

Each semester of their first year in the College, freshmen choose a Freshman Seminar from among more than thirty courses offered by more than a dozen departments. The primary purpose of the Freshman Seminar requirement is to help students improve their ability to write. This means developing every skill, from spelling and grammar to syntax and style; from the expansion of vocabulary to better organization of arguments. Emphasis is not merely on acquiring techniques, but on improving an intellectual process.

The enrollment in each section is limited so that every student may actively participate in the seminar and so that the instructors may give individual help in writing. All of the sections stress writing, although the frequency and length of the assignments may vary.

Foreign Language

The College language requirement can be met by attaining qualification in two languages or proficiency in one. Three years of language study in high school or, in most languages, a 560 score on the reading portion of the College Entrance Examination Board Achievement examination, or completion of the 102 or 123 language course (or equivalent) at Cornell will count as qualification.

Proficiency in most languages is achieved by completing a 200-level language course at Cornell or its equivalent. The 200-level courses have a 560 CEEB reading score as a prerequisite. For information about meeting the language requirement through the study of Hebrew or Classical languages, consult the appropriate department, or see the section on language placement below.

Native speakers of a language other than English can fulfill the language requirement by demonstrating their proficiency in both the spoken and written forms of that language in an interview with an appropriate faculty member. They may also receive as many as six advanced placement credits in their native language, which can be counted toward the degree.

Distribution Requirement

Designed to ensure the breadth desirable in a liberal education, the distribution requirement rules that students must complete at least six credits in related courses in one subject in each of four groups: Group I, physical or biological sciences; Group II, social sciences or history; Group III, humanities or expressive arts; Group IV, mathematics or an area not used to fulfill the requirement in Group I, II, or III.

The physical sciences at Cornell are astronomy, chemistry, geological sciences, and physics. Social sciences include anthropology, economics, government, linguistics, psychology, sociology, and some courses in Africana studies and in women's studies. Philosophy courses, some archaeology courses, and all literature courses, whether offered by the Department of English, Classics, or Comparative Literature, or in a foreign literature department, are counted as humanities. The expressive arts are music, history of art, theatre arts, and writing courses in English and Africana studies.

A student may not use the same course to fulfill more than one College requirement, with three exceptions:

First, a course may be used to fulfill a College requirement and also to fulfill a major requirement provided the major department agrees.

Second, a one-semester course in foreign literature that is acceptable for achieving proficiency in that language and also as partial fulfillment of the distribution requirement in the humanities may be used for both purposes.

Third, foreign students who take English 211–212 may fulfill both the Freshman Seminar requirement and the humanities or expressive arts distribution requirement by taking two Freshman Seminars offered by one of the following departments: English, History, History of Art, Classics, Philosophy, Romance Studies, Russian Literature, German Literature, or Comparative Literature.

Courses used to fulfill College requirements may be taken on an S-U basis.

The ways in which the distribution requirements can be met in the various departments are explained by each department in this *Announcement* and in the *Arts College Guide*.

The Major

The major requirement is designed to direct students to focus on one field, or more if they choose. By their fourth semester, students select a major program to which they devote approximately half their time during their last two years. Prerequisites for admission and the requirements for each major are detailed by the individual departments, listed alphabetically on the following pages.

Majors are offered by each of the departments except astronomy, comparative literature, and computer science. There are also majors in Africana studies, American studies, archaeology, biology and society, dance, German area studies, Russian and Soviet studies, and social relations. In addition, the College offers the Independent Major, an interdisciplinary program which students design themselves, and the College Scholar Program, for students whose interests are unusually diverse. These programs are described in the section Special Programs and Interdisciplinary Studies.

Electives

Students must complete fifteen credits in courses offered outside the major department which are not used to satisfy other requirements.

Physical Education

The University requires students to take physical education in each term of their freshman year. Students who matriculated before August 1978 must complete four terms of physical education during their freshman and sophomore years. The College does not count physical education credit toward the 120 credits required for graduation.

Residence

Candidates for the Bachelor of Arts degree normally spend eight terms in residence. However, students who have advanced placement credit or other additional Cornell credit can graduate in six or seven terms if their faculty adviser and major department chairperson approve their plan for acceleration. Students other than transfers are normally expected to earn at least ninety credits during regular terms at Cornell. Transfer students spend a minimum of three regular terms and one six-week summer session in residence at Cornell and earn at least sixty credits during those terms.

Part-Time Study and Pro Rata Tuition

The College ordinarily expects its students to be full-time students and permits part-time attendance only in unusual circumstances and for Ithaca residents twenty-three years of age or older. In certain cases seniors who are completing their final term in the College may register for fewer than twelve credits and pay pro rata tuition.

Students who are allowed to register for part-time study must pay the student service charge ($537.50) plus one-twelfth of the remaining full tuition per credit.

Credit

A total of 120 credits, with at least 100 of these credits earned in courses taught in the College of Arts and Sciences, must be completed to earn the Bachelor of Arts degree. Some courses taught in other colleges of the University, including those certified by the major adviser as part of a student's major program, may be counted toward the 100-credit requirement. Courses taken outside Cornell, during summers, or while on leave of absence, will not count as "Arts credit" unless approved as part of an *in absentia* plan or as part of the major requirement.

Advanced Placement. Advanced placement and advanced placement credit are available to entering students who have high scores in biology, chemistry, mathematics, modern languages, or physics, on either the CEEB advanced placement examinations or on departmental examinations given at Cornell during orientation week. The Departments of History and History of Art and some of the modern foreign literature departments honor the scores of the CEEB advanced placement tests but do not give departmental examinations. The Department of English offers no departmental exam but has its own criteria for determining advanced placement and credit: performance on the CEEB English Composition or Literature achievement test, grades in high school English courses, and scores on the CEEB advanced placement examination, if available. Economics, psychology, and sociology award credit and placement for high scores on the College Level Examination Program (CLEP) examinations. The brochure, *Advanced Placement of Freshmen,* contains details and will be sent to all accepted freshmen in April. It is also available on request from the Office of Admissions, 410 Thurston Avenue.

All advanced placement and advanced placement credit are recommended by the individual departments. With few exceptions, the award of credit is not conditional upon further study of that subject at Cornell.

Leave of Absence. Students in good standing who take a leave of absence by the end of the seventh week of the semester are welcome to return to the College upon request at least three weeks before the start of a semester. Five years is the maximum length of time students may be on leave and return without special permission. A conditional leave, which requires students to stay on leave for at least a year, is granted to students who are not in good standing or who, in unusual circumstances, are allowed to take a leave of absence after the seventh week of the term. For information about withdrawals and about credit earned while on leave of absence, students should contact a member of the Academic Advising staff.

Advising

To make the best use of college requirements and options, students need the advice and support of their faculty advisers. Faculty advisers, and student advisers as well, are assigned to new students before they come to Cornell. During orientation week, students meet with their advisers to plan their first term's program, and they continue to consult with them until they have been accepted into a major program.

After acceptance into a major program, students are assigned a major adviser with whom they make many of their most important decisions at Cornell. The adviser must approve the student's course of study and eventually certify the completion of the major. The major adviser should be consulted by the student about all academic plans, including such aspects as acceleration and graduate study. The adviser's support is especially important when a student petitions for an exception to the requirements for the degree.

The Academic Advising Center, 134 Goldwin Smith Hall, serves as a resource center for faculty and student advisers and for students themselves, and welcomes all questions regarding the College. Through the advisers at the center and the faculty and student advisers, the College encourages its students to take maximum advantage of the many College programs and the University's diverse facilties.

Handicapped Students. Cornell's academic and social resources are fully available to all students, including persons who have impairment of sight, hearing, mobility, or muscular coordination. The College's adviser for the handicapped is Elaine Lefferts, 134 Goldwin Smith Hall.

Directors of Undergraduate Studies

The larger departments in the College have designated a faculty member to be the primary departmental contact for undergraduates. The Director of Undergraduate Studies is the person students should see if they are interested in majoring in the department or are interested in putting a program together that involves a substantial amount of work in the department. The chairperson usually assumes this role in smaller departments.

Note: For information about specific courses, visit the department or program office.

Department or Program Contact	*Telephone*
Africana Studies and Research Center Prof. Robert Harris, 310 Triphammer Rd.	6-5218
American Studies Prof. Cushing Strout, 110A Rockefeller Hall	6-4611
Anthropology Prof. Robert Ascher, B63 McGraw Hall	6-5137
Archaeology Major Program Office, 265 McGraw Hall	6-7254
Asian Studies Prof. Karen Brazell, chairperson, 150B Rockefeller Hall	6-5095
Astronomy Prof. Peter Gierasch, 314 Space Sciences Building	6-3507
Division of Biological Sciences Ms. Sylvia Miller, G20 Stimson Hall	6-7429
Prof. Stanley Zahler, associate director, 118 Stimson Hall	6-5233
Biology and Society Prof. Stuart M. Brown, Jr., 624 Clark Hall	6-3810
Chemistry Prof. Jerrold Meinwald, 582 Baker Laboratory	6-3301
Chinese-FALCON Program Prof. John McCoy, 320 Morrill Hall	6-6457
Classics Prof. Donald Malone, 27 Goldwin Smith Hall	6-3354
College Scholar Program Dean Lynne Abel, director, 159 Goldwin Smith Hall	6-3386
Comparative Literature Prof. William Kennedy, chairman, 244 Goldwin Smith Hall	6-4155
Computer Science Prof. Gregory Andrews, 419C Upson Hall	6-4053
Dance Prof. Peggy Lawler, Helen Newman Hall	6-2360
Economics Prof. Uri Possen, 416 Uris Hall	6-4254
English Prof. Daniel Schwarz, 335 Goldwin Smith Hall	6-4212
French Language Prof. James S. Noblitt, 314 Morrill Hall	6-4087
French Literature Prof. Jacques Béreaud, 263 Goldwin Smith Hall	6-5048

Geological Sciences
Prof. William Travers, 219 Kimball Hall 6-4726

German Area Studies
Prof. Herbert Deinert, 188 Goldwin Smith Hall 6-3932

German Language
Prof. Herbert L. Kufner, 211 Morrill Hall 6-4230

German Literature
Prof. Herbert Deinert, 188 Goldwin Smith Hall 6-3932

Government
Prof. Mary Katzenstein, 130 McGraw Hall 6-3549

History
Prof. Sherman Cochran, 434 McGraw Hall 6-4351

History of Art
Prof. Robert Calkins, chairman,
32 Goldwin Smith Hall 6-4905

Independent Major
Dean Lynne Abel, director, 159 Goldwin Smith Hall 6-3386

Indonesian-FALCON Program
Prof. John U. Wolff, 307 Morrill Hall 6-4863

Center for International Studies
Prof. Milton J. Esman, 170A Uris Hall 6-6370

Italian Language
Prof. Carol Rosen, 203 Morrill Hall 6-4298

Italian Literature
Prof. Anita Grossvogel, 285 Goldwin Smith Hall 6-7570

Japanese-FALCON Program
Prof. Eleanor Jorden, 321 Morrill Hall 6-6457

Program of Jewish Studies
Prof. Jeremy Cohen, 166 Rockefeller Hall 6-5010

Latin American Studies Program
Department Office, 190 Uris Hall 6-3345

Linguistics
Prof. James W. Gair, 407 Morrill Hall 6-5110

Mathematics
Prof. Lawrence E. Payne,
assoc. chairman, 217 White Hall 6-2383

Medieval Studies Program
Prof. Arthur Groos, 180 Goldwin Smith Hall 6-3932

Music
Prof. Malcolm Bilson, 109 Lincoln Hall 6-3425

Near Eastern Studies
Prof. David Owen, chairman, 164 Rockefeller Hall 6-6275

Philosophy
Prof. Nicholas Sturgeon, 226 Goldwin Smith Hall 6-5000

Physics
Prof. Douglas Fitchen, chairman, 109 Clark Hall 6-7561

Psychology
Prof. Lynn Cooper, 224 Uris Hall 6-6351

Religious Studies Concentration
Prof. Allen Wood, 327 Goldwin Smith Hall 6-5104

Russian and Soviet Studies
Prof. Walter Pintner, 431 McGraw Hall 6-3311

Russian Language
Prof. Leonard H. Babby, 310 Morrill Hall 6-2322

Russian Literature
Prof. Patricia Carden, 192 Goldwin Smith Hall 6-4047

Program on Science, Technology, and Society
Prof. Raymond Bowers, director, 614 Clark Hall 6-3810

Social Relations
Prof. Robin M. Williams, Jr., 342 Uris Hall 6-4266

Sociology
Prof. Richard Alba, 386 Uris Hall 6-4801

Spanish Language
Prof. Margarita Suñer, 217 Morrill Hall 6-4298

Spanish Literature
Prof. Margaret Van Antwerp-Hill,
269 Goldwin Smith Hall 6-5038

Theatre Arts
Prof. Ira Hauptman, 107 Lincoln Hall 6-3532

Undergraduate Research Program
Dean Lynne Abel, director, 159 Goldwin Smith Hall 6-3386

Western Societies Program
Prof. Douglas Ashford, 170E Uris Hall 6-6370

Women's Studies Program
Ms. Rhoda Possen, acting director, 431 White Hall 6-6480

Grades

Letter Grades

See Cornell University Grading System on p. 42.

S-U Grades

Students may elect within the first three weeks of the term to receive a grade of S (satisfactory) or U (unsatisfactory) instead of one of the letter grades (A+ through F), provided that the instructor is willing to assign such grades. A grade of S is equivalent to a grade of C– or higher; a grade of U is equivalent to any grade below C–. S means the student receives the credit specified for the course; U means no credit will be given. A few courses in the College are graded exclusively on an S-U basis. The S-U option allows students to explore unfamiliar subject areas without being under pressure to receive high grades.

Courses that will count toward satisfaction of major requirements should not be taken for an S or U grade unless the department grants permission. Students may elect the S-U option in courses used to satisfy distribution and language requirements provided that such courses do not also count toward major requirements or serve as prerequisites for admission to the major. Students are advised to use the S-U option sparingly if they intend to apply to graduate school or for transfer to another college. There is no limit on the number of courses each term for which the S-U grade option may be elected, but within the 120 credits required for the degree, a minimum of 80 credits must be in courses for which a letter grade was received.

To elect the S-U option, students should fill in the proper space on the optical scan forms during course enrollment.

To change the grading option at the beginning of the term, students should obtain a course change card from the Records and Scheduling Office, 142 Goldwin Smith Hall, fill the card out to indicate the grade option change, and have the card signed by the course instructor and their faculty adviser. The card must be returned to the Records and Scheduling Office within the first three weeks of the term. *No change in the grading option can be made after the first three weeks of the term.*

Incomplete Grades

A grade of incomplete signifies that a course was not completed before the end of the term for reasons acceptable to the instructor. Each instructor retains complete discretion in determining the circumstances for which incompletes will be given. Students must have substantial equity in the course; that is, they must be able to complete the remaining work without further registration, and must have a passing grade for the completed portion.

When a grade of incomplete is reported, the instructor will state what work must be completed, when it must be completed, and what grade should be awarded if the work is not completed by that date. If a grade is not assigned, the incomplete will remain. Unless the instructor stipulates otherwise, students will be allowed one term plus one summer to make up the work.

The grade of incomplete remains on the student's record permanently even after the final grade is recorded.

Academic Standing

Students are considered in good standing for the term if they sucessfully complete at least 12 hours of credit by the end of the term and receive no more than one D and no grade of F or U. If a student's record falls below this level or if unsatisfactory overall progress is made in grades or in hours (whether due to failures or incompletes), or in the requirements of the College or the major, the student may be considered for academic action by the Academic Records Committee, the Committee of Deans, or one of the deans of the College.

Academic Actions

Warning. Any student who fails to maintain good standing may be warned. The warning may be given informally by a committee of College deans, or it may be given formally by the Academic Records Committee. A warning is posted on a student's Permanent Record Card, but is not reported to the Registrar and does not appear on official transcripts.

Final Warning. Students whose work is so seriously deficient that they risk being required to leave may be placed on Final Warning by the Academic Records Committee. A final warning is posted on the student's Permanent Record Card, but is not reported to the Registrar and does not appear on official transcripts.

Required Leave of Absence. A student in academic difficulty may be required by the Academic Records Committee to take a leave of absence, normally for a full year. In some cases students will be required to furnish evidence that they are ready to return before being allowed to reregister in the College. Students who request to return after a period of less than a year must present to the Academic Records Committee exceptionally strong evidence of their readiness to return. "Required leave of absence" is posted on the student's Permanent Record Card; the Registrar is notified and "Leave of Absence" and the date will appear on the student's transcript.

May Not Reregister. The Academic Records Committee may stipulate that a student may not reregister in the College on the basis of a highly unsatisfactory record for one term or for failure to make satisfactory overall progress in grades, credits, or the requirements of the major. This action expels the student permanently from the College. "May not reregister" is posted on the student's Permanent Record Card; the Registrar is notified, and "May not reregister in the College of Arts and Sciences" and the date will appear on the official transcript.

Students being reviewed for academic action are urged to present evidence that will help explain their poor academic performance. Students may personally appear before the Academic Records Committee to appeal any decision or action of the committee.

Bachelor of Arts with Honors

Almost all departments offer honors programs for students who have demonstrated exceptional ability in the discipline and who seek an opportunity to explore branches of their subject not represented in the regular curriculum or to gain experience in original investigation. The honors programs are described by individual departments in the following sections of this *Announcement*.

The degree of Bachelor of Arts with honors will be conferred upon students who, in addition to having completed the requirements for the degree of Bachelor of Arts, have satisfactorily completed an honors program in their major subjects and have been recommended for the degree by their major department, the Independent Major Program, or the College Scholar Program.

Dean's List. The requirements for the Dean's List are determined by the dean and may vary from term to term. The specific criteria for a given term, together with the list of students who have met those criteria, will be posted on the bulletin board next to 144 Goldwin Smith Hall as soon as this information is available.

Bachelor of Arts with Distinction. The degree of Bachelor of Arts with distinction in all subjects will be conferred upon students who, in addition to having completed the requirements for the degree of Bachelor of Arts, have: (1) completed at least sixty credits while registered in regular sessions in the College of Arts and Sciences; (2) received a grade of B– or better in at least three-fourths of the total number of hours taken while registered in the College; (3) received a grade of A– or better in at least one-half of the total number of hours taken while registered in this College; (4) received a grade below C– in no more than one course; (5) received no failing grade; (6) maintained good standing in each of their last four terms; (7) have no incompletes remaining on their records.

Language Course Placement and Credit

In French, German, Hebrew, Italian, Latin, Russian, and Spanish, course placement is determined by students' reading scores on the College Entrance Examination Board (CEEB) Achievement Examinations. For students who have previous study or experience in Portuguese, a placement exam will be administered during orientation week. For Ancient Greek and Latin, final placement is determined by a departmental examination.

Advanced placement credit is available only during the freshman year at Cornell. Students' permanent records show only the credit earned; examination scores are not included. Students who have had only one year of study in a language may register for a 100-level course. Students who have had two or more years of language study and wish to continue in that language must provide either a CEEB score or, in the case of a language having no CEEB exam, a departmental interview. On the basis of their CEEB reading score students will fall into one of these categories:

1) CEEB reading score of 700 or above

2a) No CEEB score available after two or more years of study of a given language

2b) Further study of the language after taking the CEEB test

3) CEEB reading score below 700.

Students who have taken a CEEB test in May or later should send their scores to the Department of Modern Languages and Linguistics (DMLL), 203 Morrill Hall.

Category 1:

Students with a CEEB reading score of 700 or above (650 or above in Hebrew) are eligible to take an Advanced Standing Examination. This examination is required for those who choose to continue studying a language. Even those who do not wish to continue course work would be well advised to take the examination, because they may thereby satisfy the language requirement or receive advanced standing credit toward their Cornell degree.

The Advanced Standing Examinations in Latin and Greek are given by the Classics Department and in Hebrew by the Department of Near Eastern Studies. The examinations in French, German, Italian, Russian, and Spanish are given by the Department of Modern Languages and Linguistics during orientation week. Times and places for the examinations are listed in the orientation newspaper or students may contact the Office of Guidance and Testing in 203 Barnes Hall for a schedule.

Students who have received a score of 4 or 5 in the CEEB Advanced Placement Examination in French language (not literature) are entitled to 3 credits. These credits will be entered on the students' permanent records, along with the notation that they have satisfied the language requirement.

Students who have received a score of 4 or 5 in Latin must still take the Classics Department's examination to determine placement and possible credit. Students who have taken the CEEB Advanced Placement examination in a foreign language or literature may still decide to take an Advanced Standing Examination either to obtain an additional 3 credits or because they feel that the test they took in high school did not reflect their true competence.

For advanced placement and credit in French or Spanish literature, consult the appropriate professor of literature.

Category 2:

Students who wish to continue studying a language for which no CEEB reading score is available are required to take a CEEB examination, or, in the case of Latin, a Classics Department examination.

Students who wish to continue studying a language in which they have had a year or more of instruction since they first took the CEEB test are eligible to take the CEEB examination at Cornell before registering for courses.

Students who wish to take a CEEB examination at Cornell must register with the Office of Guidance and Testing, 203 Barnes Hall, and pay a fee of $4.

Category 3:

Students with a CEEB reading score below 700 are eligible for the courses listed in the chart below, depending on their score. For descriptions of the courses see the listings in *Cornell University: Description of Courses* and read the brochure *Advanced Placement for Freshmen*, which explains language course placement. Notice that most courses numbered 102 are offered only in the spring semester.

A score of 560 allows students to elect most of the intermediate (200-level) courses. A score of 560 is significant also because it satisfies the language qualification requirement. Students who have qualification in one language may wish to attain proficiency in that language or pursue qualification in a second language.

Courses offered either by the Department of Modern Languages and Linguistics (DMLL) or by the appropriate literature department may be taken to fulfill the language requirement.

The CEEB Guidelines for Hebrew (Department of Near Eastern Studies) and Latin (Classics Department) are given below. A departmental examination is also required for placement in Latin.

Hebrew

CEEB Reading Score	*Course Number*
Below 425	101
425–499	102
500–649	201
650–699	202
700 and above	301

Latin

Below 450	105
450–559	106, 108
560–699	207, 208
700 and above	Apply for Advanced Standing Examination

	French		*German*		*Russian*		*Spanish*	
CEEB Reading Score	*Language Courses*	*Literature Courses*	*Language Courses*	*Literature Courses*	*Language Courses*	*Literature Courses*	*Language Courses*	*Literature Courses*
Below 450	121		121		101		121	
450–559	123		123		102 123		123	
560–699	203	200 211 201–202	203	201 202	203	201	203	201 212
700 and above	Apply for Advanced Standing Examination							

Special Academic Options

Concentrations. Although not required, students may complete more than one major or elect a special concentration. Special concentrations, some of which require as few as four courses, are available in ancient Mediterranean studies, Jewish studies, Latin American studies, law and society, medieval studies, religious studies, social psychology, South Asian studies, and Southeast Asian studies. Other curricular opportunities include an early concentration in German literature, an intensive language program in Chinese and Japanese (FALCON), and an intensive English program for foreign students. Other courses of special interest are offered by the Society for the Humanities and the Women's Studies Program. Concentrations are described under Special Programs and Interdisciplinary Studies.

Teacher Preparation. The College provides undergraduate and graduate programs in the teaching of English.

Fieldwork. The fieldwork option permits students to receive academic credit for work experiences related to their major. A three-member faculty committee assesses the student's preparation for the project, arranges for ongoing supervision, and evaluates the outcome. Students on approved fieldwork projects pay Cornell tuition, often at a reduced level.

Independent Study. Students with interests that are not treated in regularly scheduled courses may devise their own courses. Independent study enables students to investigate such interests through reading and/or laboratory work in programs worked out with a professor.

Student-Initiated Courses. Another way to accommodate one's special interest is to initiate a course. Information about this option is available at the Office of Special Programs, 159 Goldwin Smith Hall.

***In Absentia* Study.** Some students may wish to enrich their programs by studying *in absentia,* either abroad or at an American institution that offers programs not available at Cornell. A request to study *in absentia* must have the support of the faculty adviser and the approval of each course by the appropriate department chairperson. The College charges $15 for each semester of *in absentia* study.

Double Registration. Double registration programs afford the opportunity for accelerated professional study. In these programs students who have completed 105 credits before their senior year, with at least 92 of those credits in Arts College courses, can, with the approval of the College and after acceptance by the second school, register simultaneously during their senior year in the College of Arts and Sciences and in either the Cornell Law School, the Cornell Medical College, or the State University of New York Upstate Medical Center in Syracuse. The students may then receive the Cornell A.B. degree at the end of the fourth year, and the J.D. or M.D. degree at the end of an additional two or three years respectively.

Dual Degree Programs. It is also possible to enter a five-year dual degree program with either the Department of Art in the College of Architecture, Art, and Planning at Cornell or the Cornell College of Engineering.

Transferring within Cornell

Students who wish to transfer from one Cornell college to another should discuss their eligibility with an admissions counselor at the new college.

Students wishing to transfer to the College of Arts and Sciences must, during the term immediately preceeding transfer, complete at least 12 credits of Arts College courses for a minimum average of 2.7. Students must not have received any incompletes, grades below C, or S-U grades (unless the course is only offered on an S-U basis).

American Studies

S. C. Strout, chairman; M. J. Colacurcio, R. H. Elias, R. L. Moore, R. Polenberg, F. Somkin

The Major

The Cornell major in American studies is basically a program of coordinated study in the history and literature of the United States. It is not a "double major." The prerequisites are minimal: one course in British or American history at the 100 or 200 level and one course in British or American literature at the 200 level. But the major itself is structured and demanding, and students who expect to become American studies majors should apply to the chairman as early as possible.

In consultation with their advisers, American studies majors elect thirty-two credits of work in the history and literature of all three large periods into which an account of the nation's development can be divided, defined for the purposes of the program as colonial, nineteenth century, and twentieth century. In order to gain both depth and breadth, they select as an area of concentration either a single period or the connections between two of the periods and take either sixteen credits in one period and eight credits in each of each of the other two, or twelve credits in each of the two periods whose connections constitute the focus of study and eight credits in the third. In addition, they take one of the specially designated interdisciplinary seminars at the 400 or 600 level. This may mean taking an additional four credits, but when the subject matter is appropriate, such a seminar may count toward the satisfaction of the period requirements. Students may divide the work between history and literature in whatever proportion serves their interests, provided that they take no more than two-thirds of their credits in any one department.

Beyond the basic requirements in American history and American literature, twelve credits above the elementary level are required in allied subjects. Eight credits of work are in the history and/or literature of another (related) culture; and four credits are in American thought, society, or culture studies from the perspective of another discipline, such as anthropology, economics, government, history of art, and sociology. (This last four-credit requirement may be satisfied outside the College.)

Courses in American history that will satisfy the thirty-two-credit requirement described in the second paragraph are offered by the Department of History; those in American literature are offered by the Department of English, the Department of Theatre Arts, and the Africana Studies and Research Center. Occasionally a course that fits an individual student's program may be offered elsewhere. Substitution will depend on the adviser's approval. A list of courses designated as interdisciplinary seminars may be obtained from the chairman.

Honors

Candidates for honors must maintain an average of B+ in courses pertinent to the major. To be eligible for a degree with honors in American studies a student must in the senior year (a) either write an honors essay for American Studies 493 (Honors Essay Tutorial) or submit to the American Studies committee three term papers written for courses in the major, and (b) take an oral examination in the declared area of special interest.

Anthropology

A. T. Kirsch, acting chairman; R. Ascher, J. A. Boon, D. R. DeGlopper, V. R. Dyson-Hudson, C. J. Greenhouse, D. J. Greenwood, J. S. Henderson, C. F. Hockett, B. J. Isbell, K. A. R. Kennedy, B. Lambert, T. F. Lynch, C. Morris, J. V. Murra, J. T. Siegel, R. J. Smith

Two majors are offered by the department: (1) a major in anthropology and (2) a major in social relations.

The Major

Anthropology includes four subdisciplinary specializations: archaeological, biological, linguistic, and sociocultural anthropology. Aside from these specializations, anthropologists have also concentrated on a number of topics and problems, as well as on the study of the diverse peoples living in all regions of the world. The listing of courses (Categories I–X) reflects these subdisciplinary specializations as well as the range of topics, problems, and world areas with which anthropologists at Cornell deal.

The major in anthropology must (1) take the two introductory courses (101 and 102), preferably during the freshman or sophomore years (Freshman Seminars in anthropology do not fulfill this requirement); and (2) take Anthropology 300, The Discipline of Anthropology, during the fall term of the junior year. In addition, the major is expected to develop some area(s) of concentration within the discipline in consultation with his or her faculty adviser. To ensure some degree of exposure to the breadth and diversity of anthropology, the major must (3) take courses at the 200 level or above in at least two of the four subdisciplines (Category III–Archaeological Courses, Category IV–Biological and Ecological Anthropology, Category V–Linguistic Anthropology, Category VI–Sociocultural Anthropology); (4) at least one course at the 200 level or above in theory or the history of the field (Category VII); and (5) at least one course which concentrates on some world area (Category VIII). A total of 32 credits of course work in anthropology beyond the introductory level is required of all majors; however, up to 8 credits of course work in cognate disciplines (see Category IX) may be offered for the major with permission of the student's faculty adviser.

The Honors Program

Anthropology majors interested in the honors program should consult the director of undergraduate studies before the beginning of their senior year and apply for admission to the program. Candidates for the degree of Bachelor of Arts with honors in anthropology must complete a thesis in the spring term of the senior year. Students may enroll in Anthropology 491 or 492, Honors Thesis, after obtaining the consent of the Honors Committee. The decision to award honors and in what degree is based on the quality of the thesis and the student's overall record.

Human Biology Program

Human biology is a program of study offered by the Department of Anthropology in order to train students in a broad variety of subjects within the area of human biology. Such subjects include human evolution, ecology, genetics, behavior, anatomy, physiology, nutrition, etc. The program is offered as a concentration to undergraduate students.

Application

All inquiries about the concentration should be directed to the Department of Anthropology. Applicants will be assigned a biological anthropologist to serve as a temporary adviser with whom they may discuss their plans.

Requirements

The requirements for the concentration in human biology are designed to ensure sufficient background in the physical sciences and mathematics to enable the student to pursue a wide range of interests in the area of modern biology. In the freshman year, two semesters of biology (Biological Sciences 101–103 and 102–104), two semesters of general chemistry (Chemistry 207–208), and two semesters of calculus (Mathematics 111–112, 111–122, or 107–108) will normally be completed. One lecture course in organic chemistry and one organic chemistry laboratory (Chemistry 253–251, or 357–358 and 301 or 251), a course in genetics (Biological Sciences 281), and a course in biochemistry (Biological Sciences 430 or 330–331) are requirements which can be completed by the middle of the sophomore year. Two semesters of physics (Physics 101–102 or 207–208) are required and should be completed early in the student's program.

The concentration in human biology requires a total of fourteen credits selected from the following: Anthropology 101, 102, 204, 221, 372, 373, 374, 375, 471, 476, and Biological Sciences 274, 360, and 477 (Section of Ecology, Evolution, and Systematics). Biological science courses included in the concentration requirement may not be used simultaneously to fulfill the breadth requirement.

Breadth requirements, designed to ensure that the student in human biology is familiar with areas of biology outside the concentration, specify that each student must pass a course in two of the following categories: (1) developmental biology (Biological Sciences 347); (2) ecology and evolution (Biological Sciences 461, 476); (3) geology (Geological Sciences 101); (4) microbiology (Microbiology 290A); (5) morphology (Biological Sciences 310, 313, 336, 345); (6) neurobiology and behavior (Biological Sciences 321, 421); (7) physical sciences and mathematics (Chemistry 287, 289, 300; Mathematics 214, 215, 216, 221; Statistics 510); (8) physiology (Biological Sciences 242 or 341, 410, 414); (9) taxonomy (Biological Sciences 316, 343); (10) nutrition (Nutritional Sciences 115, 231, 347).

Facilities

Cornell has a modern physical anthropology laboratory with a collection of osteological and fossil cast materials. Facilities for serology, anthropometry, primate dissection, and work physiology studies are available. Calculators and a statistical and reference library are maintained in the laboratory as well as drafting and photographic equipment.

Special Programs

Specialized individual study programs are offered in Anthropology 497–498 (Topics in Anthropology), open to a limited number of juniors and seniors. Consent of the

instructor is required. Undergraduates should also note that most 600-level courses are open to them if consent of the instructor is obtained.

The Department of Anthropology holds colloquia throughout the academic year. Faculty members from Cornell and other universities participate in discussions of current research and problems in anthropology. Students are encouraged to attend.

Distribution Requirement

The distribution requirement in social sciences can be met by any two courses in the Department of Anthropology, or by Archeology 100 and any anthropology course listed under Archaeology. Courses cross-listed but not taught by members of the department do not satisfy the distribution requirement.

Archaeology

A. L. Bloom (geological sciences), J. E. Coleman (Classics), W. W. Cummer (architecture), R. T. Farrell (English), J. S. Henderson (anthropology), S. W. Jacobs (architecture), D. M. Jones (archaeology), P. I. Kuniholm (Classics), T. F. Lynch (anthropology), C. Morris (anthropology), J. V. Murra (anthropology), G. W. Olson (agronomy), D. I. Owen (Near Eastern Studies), A. Ramage (history of art), J. M. Weinstein (Near Eastern Studies)

The Major

Archaeology at Cornell is an interdisciplinary subject. Since the major draws upon the teaching and research interests of faculty from many departments in order to present a broad view of the archaeological process, a student interested in the archaeology major should discuss his or her course of study with a participating faculty member as early as possible. In some areas of specialization, intensive language training should be coordinated with other studies as early as the freshman year.

As prerequisites to the major a student must complete Archaeology 100 and another introductory archaeology course with grades of C or better. Once admitted to the major, the student must take an additional thirty credits in courses from the archaeology list, chosen in consultation with the major adviser. These courses should provide exposure to a broad range of archaeologically known cultures and the methods of revealing and interpreting them. They must be distributed as follows:

A) At least 20 credits at the 300 level or above

B) At least 6 credits in each of the categories below:

1) Theory and interdisciplinary approaches

2) Old World archaeology

3) New World archaeology

Beyond these 30 credits, a student must elect at least 6 credits in related subjects outside the major, such as computer science, statistics, ethnology and history of appropriate areas, draftsmanship, photography, surveying and map making, interpretation of aerial photographs, paleography, and epigraphy.

Fieldwork. Every student should gain some practical experience in archaeological fieldwork on a project authorized by his or her adviser. This requirement may be waived in exceptional circumstances. The Jacob and Hedwig Hirsch bequest provides support for a limited number of students to work at excavations sponsored by Cornell and other approved institutions.

Concentration

Only students in other Cornell schools and colleges may elect a concentration in archaeology; they are eligible for Hirsch scholarships in support of fieldwork. To concentrate in archaeology, the student must complete Archaeology 100 with a grade of C or better and at least four advanced courses in archaeology, distributed among the three groups stipulated in (B) above.

Distribution Requirement

The distribution requirement can be satisfied in the social sciences, humanities, or expressive arts by taking Archaeology 100 and a second archaeological course chosen from the College of Arts and Sciences courses listed below. Specifically, the distribution requirement in the social sciences can be fulfilled with Archaeology 100 and any one of the following: Anthropology 150, 203, 301, 318, 333, 350, 352, 353, 354, 355, 356, 358, 361, 405, 435, 464, 493, 494, 633, 663, 664, 666, 667; in the humanities with Archaeology 100 and any of the following: Archaeology 275, 281, 310, 311; Classics 220, 221, 232, 233, 320, 321, 326, 629, 630; Near Eastern Studies 243, 244, 249, 282, 285, 344, 385, 387, 481; in the expressive arts with Archaeology 100 and any one of the following: History of Art 211, 212, 220, 221, 321, 322, 323, 324, 325, 423, 424, 431.

Asian Studies

K. Brazell, chairperson; B. R. Anderson, D. E. Ashford, M. L. Barnett, M. G. Bernal, N. C. Bodman, J. A. Boon, C. Breckenridge, J. Chaves, S. Cochran, R. D. Colle, M. B. deBary, D. R. DeGlopper, A. T. Dotson, E. C. Erickson, J. W. Gair, M. D. Glock, F. H. Golay, A. G. Grapard, A. B. Griswold, E. M. Gunn, D. G. E. Hall, F. E. Huffman, R. B. Jones, E. H. Jorden, G. McT. Kahin, M. Katzenstein, G. B. Kelley, K. A. R. Kennedy, A. T. Kirsch, R. D. MacDougall, D. R. McCann, J. McCoy, T. L. Mei, G. M. Messing, D. P. Mozingo, S. J. O'Connor, T. J. Pempel, C. A. Peterson, J. T. Siegel, R. J. Smith, J. U. Wolff, O. W. Wolters, D. K. Wyatt, M. W. Young

The Major

The applicant for admission to the major in Asian studies must have completed at least one course selected from among those listed under the Department of Asian Studies and must be recommended by the instructor in charge of that course. The student must have received a minimum grade of C in this course and in all other courses taken in the department. A student majoring in Asian studies is required to complete two courses at the 200 level in one of the Asian languages offered at Cornell. The major consists of at least 30 additional credits (which may include further language study) selected by the student in consultation with his or her adviser from among the courses listed under the Department of Asian Studies numbered 300 and above. Majors normally concentrate their work in at least one of the disciplines and in one of the following areas: China, Japan, South Asia, or Southeast Asia. The student may also consider a double major combining Asian studies with one of the disciplines.

The Honors Program

Honors are awarded those students who have completed a successful honors essay and who meet the following requirements. They must maintain a cumulative average of B+ in Asian studies courses. They should take at least one of the seminars listed below, selected in consultation with their adviser; or they may, with the approval of their adviser, substitute an advanced course in which they complete a considerable body of independent work. Honors candidates will also take Asian Studies 402, in which they write the honors essay, and Asian Studies 461. They may also enroll in Asian Studies 401 in the senior year, but this course is not required. Selection of an essay topic, normally at the end of the junior year, should be made in consultation with two interested professors, one of whom will become the student's essay adviser. At the end of the junior year, students should consult the professor with whom they plan to write their paper.

Distribution Requirement

The distribution requirement in the humanities may be satisfied in Asian studies by six credits of any 300-level courses which form a sequence, listed in *Cornell University: Description of Courses* under Asia—Literature and Religion.

Concentration in Southeast Asia Studies

A candidate for the Bachelor of Arts or Bachelor of Science degree at Cornell may take a concentration in Southeast Asia studies by completing fifteen credits of course work, including a history course and three courses or seminars at the intermediate or advanced level, two of which may be Southeast Asian language courses. Students taking a concentration in Southeast Asia studies are members of the Southeast Asia Program and are assigned an adviser from the program faculty. Such students are encouraged to commence work on a Southeast Asian language and to take advantage of summer intensive language training.

Intensive Language Program (FALCON)

For those students desiring to accelerate their acquisition of Chinese, Japanese, or Indonesian, Cornell offers a full-time, intensive language program. FALCON students spend six hours a day, five days a week, for periods up to a full year studying only the language and thus are able to complete as many as 1,200 hours of supervised classroom and laboratory work in one year.

Astronomy

K. Greisen, chairman; S. Beckwith, J. Burns, F. D. Drake, J. Elliot, P. J. Gierasch, T. Gold, M. O. Harwit, J. R. Houck, R. Lovelace, C. E. Sagan, E. E. Salpeter, S. Shapiro, Y. Terzian, S. Teukolsky, J. Veverka

Concentration

There is no undergraduate astronomy major. Students interested in grádute work in astronomy are advised to major in physics, mathematics, or engineering and take astronomy courses as electives. However, to provide guidance for those with a serious educational career interest in astronomy, a concentration in this subject is recognized and can be elected as a supplement to a major in any other subject. Such students should consult with Professor Peter Gierasch regarding their programs and goals. They will be expected to take a minimum of four one-term courses in astronomy with at least two at the upperclass level; the upperclass courses have prerequisites in physics and mathematics.

Distribution Requirement

The distribution requirement in physical sciences is met by either Astronomy 101 or 111 together with 102 or 112; also by any one of these courses plus Astronomy 215, Physics 203, Geology 101, or Geology 103 plus 105; or by Astronomy 102 or 112 plus Astronomy 332.

Chemistry

B. Widom, chairman; A. C. Albrecht, J. M. Burlitch, B. K. Carpenter, J. C. Clardy, W. D. Cooke, E. L. Elson, R. C. Fay, M. E. Fisher, J. H. Freed, B. Ganem, M. J. Goldstein, E. R. Grant, G. G. Hammes, R. Hoffmann, P. L. Houston, R. E. Hughes, F. A. Long, F. W. McLafferty, J. Meinwald, G. H. Morrison, R. F. Porter, L. Que, J. R. Rasmussen, H. A. Scheraga, M. J. Sienko, D. A. Usher, J. R. Wiesenfeld, C. F. Wilcox

The Major

A major in chemistry permits considerable flexibility in the detailed planning of a course program. The required courses can be completed in three years, leaving the senior year open for advanced and independent work in all areas of chemistry: physical, organic, inorganic, analytical, theoretical, bioorganic, biophysical. A major in chemistry can also provide the necessary basis for significant work in related areas, such as molecular biology, chemical physics, geochemistry, chemical engineering, solid-state physics, and medicine.

The courses are arranged as a progression with some courses (including mathematics and physics) prerequisite to those that are more advanced. During the first year, the student should normally register for general chemistry (preferably but not necessarily Chemistry 215), mathematics, a Freshman Seminar course, a foreign language if necessary or, in some instances, physics. Although Chemistry 215–216 is preferred, students may begin their programs with Chemistry 207–208. Chemistry 215–216 is a limited enrollment course for those students with excellent preparation; students who are uncertain as to their preparation should consult the instructor. In the second year the student should complete calculus; take physics and organic chemistry, Quantitative Chemistry 300, if needed, and Experimental Chemistry 301. Physical Chemistry 389 and 390 and Experimental Chemistry 302 and 303 should be completed in the third year. Advanced work in chemistry and related subjects can be pursued in the fourth year and, to some extent, in the earlier years as well. The opportunity for independent research is also available. All students with questions about details of a major program are encouraged to consult with the chairman of the Department of Chemistry or the chairman's representative. Entering students exceptionally well prepared in chemistry may receive advanced placement credit for Chemistry 207–208 and proceed to a more advanced program.

Prerequisites for admission to a major in chemistry are (1) Chemistry 215–216 or 207–208 plus 300; (2) Physics 207; and (3) Mathematics 111 or 191. Students are not encouraged to undertake a major in chemistry unless they

have passed those prerequisite courses at a good level of proficiency. A knowledge of simple computer programming is essential. This may be achieved either by self-study (a syllabus is available) or by taking courses such as Computer Science 100. As a minimum, the following additional courses must then be completed for a major in chemistry: (1) Chemistry 301, 302, 303, 357–358, 389–390; (2) Mathematics 112 plus 214, 215, 216, 217; or 122 plus 221, 222; or 192 plus 293, 294; and (3) Physics 208. This sequence is a core program in chemistry. It is anticipated that students will, through elective courses, extend it substantially in whatever direction suits their own needs and interests. It is particularly important that those going on to do graduate work in chemistry recognize that these requirements are minimal, and such students are strongly urged to supplement their programs, where possible, with Chemistry 404, 405, 605, 606, 607, 668, 681, and German (or Russian). Even students not planning graduate work in chemistry should consider advanced work in physics and mathematics, courses in the biological sciences, and advanced work in chemistry as possible extensions of the basic program.

The Honors Program

The honors program in chemistry offers superior students an opportunity to study independently in seminars and to gain additional experience by engaging in research during the senior year. It is particularly recommended to those who plan graduate work in chemistry. Prospective candidates should complete the introductory organic chemistry and physical chemistry sequences by the end of the junior year. However, failure to have completed those courses in the junior year does not in itself disqualify a student from the honors program. Completion of the program at a high level of performance leads to the degree of Bachelor of Arts with honors in chemistry. The requirements for admission to the honors program are an above-median cumulative average and permission of the department. Prospective candidates should discuss their plans with their advisers by March 1 of their junior year. To be awarded honors, candidates must show outstanding performance in at least eight credits of undergraduate research such as offered in Chemistry 421; 433, 461, or 477. In addition outstanding work in the Honors Seminar, Chemistry 498, is expected.

Distribution Requirement

The distribution requirement in physical science is satisfied in chemistry by Chemistry 103, 207, or 215 and 104, 208, or 216.

Laboratory Course Regulations

Students registered for laboratory courses who do not appear at the first meeting of the laboratory will forfeit their registration.

Students and members of the teaching staff are required to wear safety glasses or approved eye-protective devices in all chemistry laboratories. Those who fail to cooperate with the safety program may be asked to leave the laboratories.

Classics

K. Clinton, chairman; L. S. Abel, F. M. Ahl, E. Asmis, R. Basto, J. E. Coleman (graduate faculty representative), J. R. Ginsburg, W. R. Johnson, G. M. Kirkwood, P. Kirkwood, P. I. Kuniholm, D. L. Malone, G. M. Messing, J. A. O'Donnell, A. Pomeroy, P. Pucci, S. Stambler

Majors

The Department of Classics offers majors in Classics, Greek, Latin, and Classical civilization.

Classics

Those whose major study is in Classics must complete twenty-four credits in advanced courses in Greek or Latin (courses numbered 201 or above) and fifteen credits in related subjects, selected after a conference with the adviser.

Classical Civilization

Those whose major study is in Classical civilization must complete (a) qualification in Latin and Greek or proficiency in either; (b) twenty-four credits selected from the courses listed under Classical civilization, Classical archaeology, Latin, and Greek; and (c) fifteen credits in related subjects. Related subjects for this purpose may be any courses in the humanities selected in conference with the adviser.

Greek

Those whose major study is in Greek must complete twenty-four credits of advanced courses in Greek and fifteen credits in related subjects (including Latin). One or more courses offered by the Department of Comparative Literature may be counted towards the required twenty-four credits of Greek if students obtain the prior approval of their major adviser.

Latin

The major in Latin is parallel to the major in Greek.

The Honors Program

Candidates for the degree of Bachelor of Arts with honors in Classics, Greek, Latin, or Classical civilization must fulfill the requirements of the appropriate major study, as prescribed in the foregoing paragraphs and also must complete successfully the special honors courses 370, 471, and 472. Credit for honors courses may be included in the credits required for the major study. Students who wish to become candidates for honors, who have a cumulative average of B– or better, and have demonstrated superior performance in Classics courses (Greek, Latin and Classical civilization) should, after consulting a member of the department, submit an outline of their proposed honors work to the honors committee during the first month of their fifth semester.

Study Abroad

Cornell is a participant in the Intercollegiate Center for Classical Studies in Rome, which offers courses in Latin, Greek, ancient history, art, archaeology, and Italian. Cornell is also a member institution of the American School of Classical Studies at Athens, whose Summer Program is open to graduate students and qualified undergraduates. Detailed information on these programs is available in the Department of Classics Office, 120A Goldwin Smith Hall.

Distribution Requirement

The distribution requirement in the humanities is satisfied in Classics by (a) any two courses in Greek beginning with 201 or in Latin beginning with 205 that form a reasonable sequence; or (b) any two of the following: Classics 100, 119, 120, 121, 211, 212, 220, 221, 224, 225, 226, 232, 233, 236, 237, 238, 300, 304, 309, 320, 321, 322, 323, 326, 331, 332, 333, 336, 337, 339, 340, 345, 360, 363, 365, 365A, 426, 428, 430, 431, 610, 629, 630.

Placement in Latin

Placement of first-year students in Latin courses is determined by an examination given by the Department of Classics during orientation week, or, if necessary, in the second half of the fall term.

Comparative Literature

W. J. Kennedy, chairman; W. W. Holdheim, acting chairman; T. Bahti, C. M. Carmichael, M. Spariosu; with J. Culler (English), D. I. Grossvogel (Romance Studies), P. Hohendahl (German), E. Rosenberg (English)

Also cooperating: M. H. Abrams, C. Morón-Arroyo, J. P. Bishop, E. A. Blackall, M. A. Carlson, E. G. Fogel, G. Gibian, S. L. Gilman, A. V. Grossvogel, T. L. Jeffers, W. R. Johnson, C. Kaske, R. E. Kaske, G. M. Kirkwood, C. Levy, H. S. McMillin, B. O. States

Although the Department of Comparative Literature offers no formal undergraduate major program, well-qualified students may design the equivalent of such a major with the advice of a faculty member and present their proposal to the Independent Major Program. In addition, most of the courses in comparative literature may be counted toward the major requirements of other departments at their option. For information consult the Classics, English, Germanic studies, Romance studies, and Russian sections in this *Announcement*.

Distribution Requirement

The distribution requirement in the humanities may be satisified by any two of the 200- or 300-level courses in comparative literature. 400-level courses may be applied with the permission of the instructor. Any of the 100-level courses may be used toward satisfying the Freshman Seminar requirement.

Computer Science

J. Hartmanis, chairman; G. Andrews, R. Cartwright, R. L. Constable, R. W. Conway, A. Demers, J. E. Dennis, Jr., J. Donahue, D. Gries, J. E. Hopcroft, F. Luk, G. Salton, F. Schneider, T. Teitelbaum, C. Van Loan

Although there is no formal undergraduate major in computer science, the department offers a comprehensive set of undergraduate and graduate courses from which students can select appropriate sequences to fit their major interests. It is possible to take a strong computer science minor through the Mathematics Department (option II) or to include computer science as part of an independent major with substantial work in other fields — as in the case of a sociology student who wants to learn to use computers. Such majors must be approved by the Independent Major Board.

There are two introductory courses with distinct aims. 100 offers a full semester of programming instruction using the languages PL/I and FORTRAN, the goal being to teach the student how to use the computer. 101 offers an extensive survey of the capabilities and applications of computers as well as some instruction in PL/I programming (about half as much as 100).

A student completing 101 may elect to take 100 although 101 is not considered a prerequisite for 100. 100 is a prerequisite for subsequent courses in computer science (for example, 211 or 321).

Students who want a strong minor in computer science should take the following courses: 211, 280, 314, 410, and two from 321, 322, 414, 432, 481, 482, 611, 612.

Economics

M. Majumdar, chairman; R. Brickman, W. A. Brock, M. G. Clark, T. E. Davis, L. Ebrill, R. Ehrenberg, R. H. Frank, W. Galenson, M. Gertler, R. H. Golay, W. Greene, E. Grinols, M. R. Haines, G. H. Hildebrand, W. Isard, A. E. Kahn, S. Marston, R. Masson, P. D. McClelland, U. M. Possen, R. E. Schuler, S. M. Slutsky, G. J. Staller, J. Svejnar, E. Thorbecke, S. C. Tsiang, J. Vanek, H. Y. Wan, Jr.

The Major

Students who wish to major in economics must have completed Economics 101–102 or its equivalent with an average of C or better. Students who have completed only one semester of the introductory course may be accepted as provisional majors provided their grade was at least C. Prospective majors should report to the Department of Economics Office.

The requirements for a major are: (1) Economics 311 and 312; (2) twenty credits of other economics courses listed by the Department of Economics in *Cornell University: Description of Courses*, except that, with the permission of the major adviser, two economics courses outside the College of Arts and Sciences may be used to fulfill this requirement; and (3) three courses above the introductory level in subjects related to economics selected, with the approval of the major adviser, from the offerings of the Departments of Anthropology, Asian Studies, Government, History, Mathematics, Philosophy, Psychology, and Sociology.

In addition to the courses required for the major, many students will find it valuable to take statistics (the diverse possibilities include Agricultural Economics 310, OR & IE 270 or OR & IE 260 and 370, and Mathematics 370 and 371, 472, 475). Mathematics courses are not needed for an undergraduate major. However, students planning graduate work in economics are strongly advised to take mathematics at least through calculus and linear algebra.

The Honors Program

Candidates for the degree of Bachelor of Arts with honors are required to have: (1) a grade-point average in economics courses of A– or better, except in exceptional circumstances; (2) enrollment in the senior year in Economics 391 and 392.

Distribution Requirement

The distribution requirement in social sciences may be satisfied by Economics 101–102.

English

A. R. Parker, chairman; M. H. Abrams, B. B. Adams, A. R. Ammons, J. P. Bishop, J. F. Blackall, S. Budick, A. Caputi, M. J. Colacurcio, J. Culler, D. D. Eddy, R. H. Elias, S. B. Elledge, R. T. Farrell, E. G. Fogel, L. Green, L. Herrin, N. H. Hertz, T. D. Hill, T. L. Jeffers, C. V. Kaske, R. E. Kaske, R. Kirschten, C. S. Levy, A. Lurie, P. L. Marcus, D. E. McCall, K. A. McClane, J. R. McConkey, H. S. McMillin, D. M. Mermin, J. B. Merod, R. Morgan, D. Novarr, S. M. Parrish, B. Rosecrance, E. Rosenberg, P. L. Sawyer, D. R. Schwarz, H. E. Shaw, S. Siegel, W. J. Slatoff, J. Stallworthy, B. O. States, S. C. Strout, W. Wetherbee

The Major

Any student considering a major in English should see the director of undergraduate studies in English to arrange an assignment to a major adviser. Copies of a brochure containing suggestions for English majors and prospective English majors are available in the department's office, 252 Goldwin Smith Hall.

Prospective English majors should take one or more courses from the group English 270, 271, 272, 280, 281 as early as possible. All these courses are open to sophomores; English 270, 271, 272 are also open to second-term freshmen and may be used to satisfy the Freshman Seminar requirement. First-term freshmen with advanced placement in English may enroll in English 270, 271, or 272 as space permits, and prospective English majors are encouraged to do so. As soon as students have completed one of these courses they may declare themselves as English majors, provided they have achieved a letter grade of C or better in this and any other English course they may have taken.

English majors are required to complete six credits of foreign language study (preferably in the literature of a foreign language) in courses for which qualification is a prerequisite. Majors are urged to complete this requirement by the end of their sophomore year, and those who enter Cornell without sufficient preparation should therefore begin their language study at once.

In addition to satisfying the requirements outlined above, English majors must take a minimum of thirty-six credits in courses approved for the major and complete them with passing letter grades. Courses approved for the major are English 201, 202, and all English courses numbered 300 or above except English 496, 570, 571, 575, 576, 578 and 579. Students may also offer in satisfaction of the major as many as three courses numbered 300 or above in a foreign literature, in comparative literature, or in special courses such as those sponsored by the Society for the Humanities, provided these alternatives are approved by the adviser as relevant to the major.

Among the courses approved for the major, English 201 and 202 are especially recommended for English majors and should be taken by the end of the sophomore year. Students who do not take English 201–202 should choose their major courses with a view toward covering the historical range of English and American literature. Literature courses at the 300 level are intended to provide such coverage.

Of the thirty-six credits required for the major, at least eight must be in English or American literature written before 1800.

The Honors Program

Prospective candidates for the degree of Bachelor of Arts with honors in English should consult with the chairperson of the Honors Committee during the spring term of their sophomore year or early in their junior year.

Honors candidates will take one or two Honors Seminars (491 or 492) during their junior year, as well as a 400-level course in the field in which they plan to work during their senior year. The work of the senior year is a year-long tutorial (493 and 494) on a special topic of the candidate's choosing, culminating in the writing of an honors thesis of approximately 50 pages.

More information about the program may be found in the department's brochure for honors candidates.

Distribution Requirement

The distribution requirement in the humanities may be satisfied with any two courses in English at the 200 level or above other than those required for teacher certification (English 496 and courses in the 500s). The distribution requirement in the expressive arts may be satisfied with any two courses in English at the 200 level or above numbered in the 80s.

If students have used English courses to satisfy the expressive arts requirement, then the student should not take courses numbered in the 80s to satisfy the humanities requirement.

Teacher Preparation

Prospective teachers of English in secondary schools who seek provisional certification in New York State must fulfill all the requirements of the major. In addition, they elect a special program of professional courses. A detailed statement about programs for teachers is available in the office of the Department of English.

Courses for Nonmajors

For students not majoring in English, the department makes available a variety of courses at all levels. Some courses at the 200 level are open to qualified freshmen, and all of them are open to sophomores. Courses at the 300 level are open to juniors and seniors and to underclass students with permission of the instructor. The suitability of courses at the 400 and 600 levels for nonmajors will vary from topic to topic, and permission of the instructor is required.

Courses for Freshmen

As part of the Freshman Seminar Program, the Department of English offers many one-semester courses. The courses are concerned with various forms of writing (narrative, biographical, expository), with the study of specific areas in English and American literature, and with the relation of literature to culture. Students may elect any two of these courses during their first year to satisfy the Freshman Seminar requirement.

Geological Sciences

J. E. Oliver, chairman; W. A. Bassett, J. M. Bird, A. L. Bloom, L. D. Brown, J. L. Cisne, B. L. Isacks, D. E. Karig, S. Kaufman, R. W. Kay, F. H. T. Rhodes, W. B. Travers, D. L. Turcotte

The Department of Geological Sciences is an intercollege department of the College of Arts and Sciences and the College of Engineering.

The Major

The prerequisites for admission to a major in geological sciences are two of the two-semester sequences of courses chosen from the following, or their equivalents: Biological Sciences 101–103 or 102–104; Chemistry 207–208, Mathematics 191–192; and Physics 112–213. Geological Sciences 101–102 is recommended, but a student with a strong foundation in mathematics and science may be accepted as a major without completion of 101–102.

Majors take the six core courses in geological sciences, a summer field geology course, one additional course in

geological sciences numbered 400 or above, and a third two-semester sequence chosen from the courses in biological sciences, chemistry, mathematics, and physics listed above, plus an additional course in one of these fields at an intermediate or advanced level. In addition, majors must complete a senior thesis. The core courses in geological sciences include:

325 Structural Geology and Sedimentation

345 Geomorphology

355 Mineralogy, Petrology, and Geochemistry I

356 Mineralogy, Petrology, and Geochemistry II

376 Historical Geology and Stratigraphy

388 Geophysics and Geotectonics

Prospective majors should consult one of the following departmental major advisers: W. A. Bassett, 222 Kimball; A. L. Bloom, 211 Kimball; R. Kay, 304A Kimball; J. Oliver, 209 Kimball; or W. B. Travers, 219 Kimball, as soon as possible for advice in planning a program. Students majoring in geological sciences should attend the departmental seminars and take advantage of cruises, field trips, and conferences offered through the Department of Geological Sciences.

Courses for Nonmajors

Certain 300-level courses in geology may be of particular interest to students of chemistry, biology, ecology, and physics. Nonscience undergraduate students are also encouraged to inquire about these courses in Room 210, Kimball Hall.

Distribution Requirement

The distribution requirement in physical sciences is met by Geological Sciences 101 – 102 or 103, 105, and 102.

Government

G. H. Quester, chairman; B. R. O'G. Anderson, D. E. Ashford, M. G. Bernal, S. Buck-Morss, D. J. Danelski, W. J. Dannhauser, A. T. Dotson, E. J. Eisenach, M. J. Esman, B. Ginsberg, G. McT. Kahin, M. Katzenstein, P. Katzenstein, E. W. Kelley, E. G. Kenworthy, I. Kramnick, P. Leeds, T. J. Lowi, D. P. Mozingo, T. J. Pempel, R. H. Rosecrance, M. Rush, L. Scheinman, M. Shefter, S. G. Tarrow, N. T. Uphoff, D. E. Van Houweling

To accommodate new courses or course changes, a supplementary announcement is prepared by the department. Before preregistering or registering each term, students are requested to consult the current *Supplementary Announcement of Courses in Government*, available in 125 McGraw Hall.

The Major

For a major in government the following courses must be completed: (1) three of the following introductory courses: Government 111, 131, 161, 181; (2) a minimum of twenty-four additional credits in government department courses numbered 300 or above; (3) in related subjects, a minimum of twelve credits selected with the approval of the adviser from courses numbered 300 or above in the Departments of Anthropology, Economics, History, Philosophy, Psychology, and Sociology. S-U options are not allowed in any course needed to fulfill the government major.

Juniors and seniors majoring in the Department of Government who have superior grade records may apply for supervised study in government with a particular instructor, whose consent is required.

European Studies Concentration

Government majors may elect to group some of their required and optional courses in the area of European studies, drawing from a wide variety of courses in relevant departments. Students are invited to consult Professors Katzenstein, Scheinman, and Tarrow for advice concerning course selection, foreign study programs, etc.

The Honors Program

A small number of exceptionally well-qualified students are accepted each year in the honors program. Admission is by application and is competitive. Students who wish to be considered must complete an application in the spring semester of their sophomore year. Those who are admitted will register for Government 400. Successful completion of Government 400 entitles the student to write an honors thesis (Government 494, eight credits) or honors paper (Government 494, four credits) in the senior year, provided other requirements have been met. The decision to award honors and in what degree will be based on the quality of the thesis or paper, the student's record in government courses, and the student's overall record at Cornell.

Interested students should consult the *Supplementary Announcement* available in the departmental office in 125 McGraw Hall. Further inquiries may be addressed to the Director of Undergraduate Studies, 130 McGraw Hall.

Distribution Requirement

The distribution requirement in the social sciences is satisfied in government by taking two of the following courses: Government 111, 131, 161, and 181; or by taking one of 111, 131, 161, or 181 followed by a 300-level course in the same area.

History

R. Polenberg, chairman; D. A. Baugh, A. H. Bernstein, S. Blumin, S. G. Cochran, T. H. Holloway, C. Holmes, I. V. Hull, J. J. John, M. Kammen, S. L. Kaplan, D. C. LaCapra, W. F. LaFeber, P. R. Metcalf, R. L. Moore, J. Najemy, M.B. Norton, C. A. Peterson, W. M. Pintner, W. B. Provine, P. A. Rahe, J. H. Silbey, F. Somkin, B. Tierney, J. Weiss, L. P. Williams, O. W. Wolters, D. K. Wyatt

The Major

To complete the history major, a student must have (1) completed either the Introduction to Western Civilization (History 151 – 152) or the introduction to Asian Civilizations (History 190 – 191); (2) taken history courses totalling thirty-four credits, completing all these courses with a grade of C or better; of the thirty-four credits, sixteen must be in courses numbered above 300, and of these sixteen, eight must be in one particular field of history (e.g. modern American, ancient, early modern European); (3) taken two courses above the elementary level offered by other departments that relate to the eight-credit concentration in one particular field of history.

Prospective majors may wish to discuss their projected program with the director of undergraduate studies before formally enrolling with the department.

The Honors Program

History majors with an overall B+ average in all their history courses are eligible to enroll in History 400, the Honors Proseminar, which is normally taken in the junior year or at the latest, in the fall of senior year. (Honors candidates are strongly encouraged to take another 400-level seminar during their junior year.) Students with a grade of B+ or higher in the proseminar may then become candidates for the degree of Bachelor of Arts with honors in history by submitting to a prospective faculty adviser a written thesis proposal delineating the general area of inquiry for an honors essay and having the proposal approved by the adviser. The proposal should be submitted as soon as possible after the completion of History 400, normally during the junior year or at the beginning of the senior year.

After acceptance of the proposal by an adviser, honors candidates should then enroll with their advisers in History 302, Supervised Research, during the first term of their senior year. History 302 is a four-credit course which permits honors candidates to conduct research and to begin writing the honors essay. At the end of the first semester of the senior year, as part of the requirements for History 302, the student will submit to his or her adviser a ten to fifteen page overview of the entire thesis or a draft of some substantial section of the thesis and will undergo an oral examination on the broad field of history which the student researched. The examination will be administered by a committee consisting of the student's adviser and one other department member, who will eventually serve as a reader of the thesis. The committee will then recommend whether the student may proceed to enroll in History 401, Honors Guidance, during the final semester of senior year. History 401 is a four-credit course which permits honors candidates to complete the honors essay and to prepare both to defend the essay and to demonstrate their understanding of the general historical interests they have pursued within the major. Students who do not take History 400 in their junior year must submit both the thesis proposal and the prospectus by the end of the fall semester of their senior year in order to be eligible for enrollment in History 401 by their final semester.

Honors candidates must complete a minimum of 38 hours in history, 8 of which must be History 400–401. The completed thesis will be examined by three readers, including the two faculty members who administered the preliminary oral examination.

The text of the honors essay may not exceed sixty pages except by permission of the chairperson of the honors committee and the student's adviser. Two copies will be due during the third week of April. In May each honors candidate will be given an oral examination administered by the major adviser and one or both of the essay readers. The examination will focus on the specific issues of the essay as well as the broad field of history in which the student has concentrated his or her research (e.g. Periclean Athens, seventeenth-century science, nineteenth-century America).

To qualify for a Bachelor of Arts degree with honors in history, a student must (1) sustain at least a B+ cumulative average in all history courses; and (2) earn at least a *cum laude* grade on the honors essay and on the oral examination.

Students considering the honors program should consult Professors Wyatt, Holmes, or Weiss during the second term of their sophomore year or early in their junior year.

Distribution Requirement

The distribution requirement is satisfied by any two courses in history.

Underclass Seminars

The orientation of these introductory seminars will be historical, with considerable attention given to writing skills and the critical discussion of humanistic values. Particular attention will be given to questions of public policy, problems of social change, and the dimensions of comparative historical analysis.

Freshmen and sophomores are eligible for the seminars. No special background in history is required, but students who wish to enroll must obtain the permission of the instructor. The seminars will be limited in size to about ten students each. Some of the seminars may be taken, with the instructor's consent, to fulfill the Freshman Seminar requirement. A full list of seminars is available in the history department office.

History of Art

R. G. Calkins, chairman; T. M. Brown, E. G. Dotson (on leave), J. V. Falkenheim, C. E. Gilbert, R. C. Hobbs, H. P. Kahn, T. W. Leavitt, S. J. O'Connor, A. Ramage (on leave), N. Ramage, A. S. Roe, M. W. Young

The Major

Students who wish to major in the history of art should plan to have completed two courses in the Department of the History of Art by the end of their sophomore year. Students who have taken only one course may petition the chairman to major in the department if that course is at the 200 level or above and is completed with a grade of C or better.

In their junior and senior years, majors will work closely with their major advisers to determine acceptable programs of courses in the major field. Normally the program will include at least thirty additional credits in history of art courses, of which twenty-four should be at the 300 or 400 level (chosen from those listed below) and a minimum of two additional courses in the department or a related area approved by the major adviser. Courses at the 200 or 300 level taken in the department during the freshman or sophomore years may be counted toward the major, providing such courses are in addition to the two courses offered in satisfaction of the prerequisite to the major. Majors are encouraged to take studio courses in painting and sculpture offered by the Department of Art, but such courses will be considered electives and may not count toward the basic thirty credits normally required in the major.

The Honors Program

In order to become a candidate for the degree of Bachelor of Arts with honors in the history of art, a student must have a cumulative average of B for all courses in the Department of the History of Art. Admission into the program requires the consent of the department chairman during the second term of the student's junior year. In the senior year the honors candidate will include among the regular requirements Art History 493–494, which entails the preparation of a senior thesis under faculty supervision.

Distribution Requirement

The distribution requirement in expressive arts is satisfied by a combination of any two history of art courses at the 200 level or above, or Archaeology 100 and one of the history of art courses listed under archaeology.

Mathematics

C. Earle, chairman; I. Berstein, L. Billera, J. Bramble, K. Brown, L. Brown, S. Chase, M. Cohen, R. Dennis, E. Dynkin, A. Edmonds, R. Farrell, M. Finster, M. Fisher, W. Fuchs, S. Gelbart, L. Gross, R. Hamilton, D. Henderson, J. Hubbard, P. Kahn, H. Kesten, J. Kiefer, A. Knapp, D. Kubert, S. Lichtenbaum, G. Livesay, O. McBryan, M. Morley, A. Nerode, L. Payne, R. Platek, A. Rosenberg, O. Rothaus, A. Schatz, S. Sen, R. Shore, A. Sommese, F. Spitzer, R. Strichartz, M. Sweedler, L. Wahlbin, J. West, A. Zitronenbaum

Much time may be saved by a careful reading of this announcement.

Members of the department are available to discuss with students the appropriate courses for their level of ability and interest, and students are urged to avail themselves of this help.

Students wanting a general introductory mathematics course are advised to take 107–108.

Students wishing to take any of the courses numbered 300 or above are invited to confer, before registering, with the instructor concerned.

Subject matter of courses is indicated by the second digit of the course number: 0, general; 1, 2, analysis; 3, 4, algebra; 5, 6, topology and geometry; 7, probability and statistics; 8, logic; 9, other. The level of a course is indicated by the first digit: roughly, 1, 2, indicate underclass courses; 3, 4, upperclass courses; 5, 6, graduate courses.

Mid-term grades, when required, will be S or U only, except in special circumstances. In all 600-level courses, final grades will be S-U only, with the exception of 690. In courses with numbers below 600, students will receive letter grades, with the exception of nonmathematics majors who have requested an S-U grade.

Advanced Placement

Secondary school students are strongly urged to take one of the two advanced placement examinations of the College Entrance Examination Board in their senior year. In addition, there will be a placement examination in mathematics offered at Cornell just before the beginning of classes in the fall which some students should take. It is most important that anyone with any knowledge of calculus carefully read the brochure, *Advanced Placement of Freshmen.*

The Major

Questions concerning the major in mathematics should be brought to a department representative. The general description of the options available follows.

Option I

This option is appropriate for students who contemplate a Ph.D. in pure mathematics or applied mathematics. Prerequisite: 221–222, and, if neither 122 nor 293 has been taken, also 217. Requirements: (a) 411–412, (b) 431–432, (c) at least twelve additional credits of mathematics courses numbered 300 or above, other than 311, 331, 332, 370; Computer Science 621, 622 may be included in these twelve credits, (d) one course from outside mathematics with serious mathematical content and dealing with scientific matters, or Math 305.

The department strongly recommends that all prospective Option I majors take Physics 112 and 213 or 207–208 in their freshman year. Students should also seriously consider the offerings in differential equations, probability and statistics, and numerical analysis.

Option II

This option is appropriate for those mainly interested in the application of mathematics and/or computer science. It does not prepare a student for work at the Ph.D. level in the theoretical side of mathematics, not even in the theoretical side of such areas as statistics and numerical analysis, unless 411–412 is taken. Students who plan to continue in mathematical economics, mathematical biology, or other applied areas should discuss their program with their adviser. Prerequisites: (a) 221–222, and, if neither 122 nor 293 has been taken, also 217; (b) Physics 207–208 or 112 and 213. Requirements: (a) 421, 422; (b) 431, and either 332 or 432; (c) Computer Science 211 (with Computer Science 100 as prerequisite) (d) an approved eight credit sequence in statistics, numerical analysis (in the Department of Computer Science), or differential equations; (e) at least eight additional credits of courses numbered 300 or above in mathematics, computer science, or a physical science not including Mathematics 331, 370, or Computer Science 100.

An alternate version with emphasis on computer science. Prerequisites: (a) 221–222, and, if neither 122 nor 293 has been taken, also 217; (b) Computer Science 100. Requirements: (a) 421–422 or 411 plus one additional course approved by the mathematics department; (b) 431 and either 332 or 432; (c) Computer Science 314, 410, and one of the following: 321–322, and 481 or 414; 481–482, and 321 or 414; 611–612, and 321 or 481 or 414.

Alternate version with emphasis on operations research. Prerequisites: (a) 221–222, and, if neither 122 nor 293 has been taken, also 217; (b) Computer Science 100. Requirements: (a) 421–422 or 411 plus one additional course approved by the mathematics department; (b) 431 and either 332 or 432; (c) two of OR&IE 435, OR&IE 634, OR&IE 431, OR&IE 432, OR&IE 630; (d) OR&IE 320 and Math 471; (e) OR&IE 321 or OR&IE 361 or OR&IE 561. (Operations research courses are offered by the College of Engineering.)

Option III

This option is for students who wish to major in mathematics but do not intend to become professional mathematicians. It does not prepare a student for graduate work in mathematics. It is appropriate for premedical and prelaw students and for students who want to become teachers of secondary mathematics, but Cornell University no longer grants certification. Students interested in teacher training can get information from Professor Henderson. Prerequisites: (a) 222 or (a′) 214–215–216 and either 331 or 332. If neither 122 nor 293 has been taken, 217 is required. (b) Physics 101–102, or 207–208. Mathematics requirements: (a) 311, and 421 or 418; (b)

331, if 221 has not been taken; 332; (c) 451; (d) Computer Science 100; (e) 403 or 370 or 471, and eight additional credits of mathematics courses numbered above 300. It is recommended that 421 or 418, as required under (a) be completed in the junior year.

The Honors Program

Honors in mathematics will be awarded on the basis of a high level of performance in departmental courses. Further requirements, if any, will be announced during the year.

Distribution Requirement

The distribution requirement is satisfied in mathematics by any six credits, not including more than one course from 105, 107, 403. Computer Science 100 may be used for three of these credits. The mathematics distribution requirement is also satisfied by a score of 3 on the CEEB-BC examination. However, Mathematics 109 or Orientation 115, College of Agriculture and Life Sciences, may not be used.

Basic Sequences

College algebra and trigonometry are taught in Mathematics 109 and also in Orientation 5 and 115, offered by the College of Agriculture and Life Sciences. Mathematics 109 is designed to prepare students for Mathematics 108 or 111.

There are two sequences in elementary calculus and several special purpose sequences. The two elementary calculus sequences have 111 in common, for which, however, 191 or 193 may be substituted. The upper sequence continues with 122, 221, and 222, while the standard sequence continues with 112 and the package of one-credit courses 214–215–216–217. Students who desire to take advanced courses in theoretical mathematics should take the upper sequence, which is prerequisite to most of them. However, the honors sequence 295–296 is a reasonable substitute for the sequence 221–222. A student whose performance in 112 has been exceptional may be admitted into 221 but, if neither 122 nor 293 is taken, 217 is a prerequisite for a major in mathematics. A student in the standard sequence who wants the linear algebra material of 221 may obtain it in 331.

The special purpose sequences are 105–106, 107–108, and 191 or 193–192–293–294. The latter is primarily for engineers and is also recommended for physics majors. Note that there are honors versions of 293 and 294, namely, 295 and 296, respectively. Mathematics 107–108 is intended primarily for students in the more descriptive areas of the social sciences, and will normally be terminal. 107–108 does not fulfill the mathematics requirement for biology majors. Mathematics 107 treats finite mathematics, and 108 gives an introduction to calculus; 108 may be taken without 107, and is preferable to 111 for students desiring only one semester of calculus. Mathematics 105–106 is similar to 107–108 but it presents mathematics from the point of view of the biologist.

Students who want a second semester of mathematics after Orientation 115 are advised to take 107 or 105, or, if they need a calculus course, 111. However, they cannot receive credit for both Orientation 115 and 108. Students interested in starting with two semesters of calculus should take Mathematics 111–112 or 111–122. Students who want two semesters of calculus can also follow 106 with 112 or 122; or 108 with 112 if they have done exceptionally well in 108. In exceptional circumstances they may follow 106 with 214–217, providing they make up some missing material on their own. Students wishing to switch between sequences may take 105 and 111, or 107 and 111.

Students cannot receive credit for both 105 and 107, nor for both 108 and Orientation 115. Nor can they receive credit for more than one of 106, 108, 111, 191, 193. Nor can they receive credit for more than one of 112, 122, 192, 194. Nor can they receive credit for more than one of 214–216, 293, 295. Nor can they receive credit for both 221 and 214 or 216. Nor can they receive credit for both 216 and 192. Nor can they receive credit for both 217 and any one of 122, 293, 295. Nor can they receive credit for more than one of 221, 293, 295, 331.

Modern Languages, Literatures, and Linguistics

The Department of Modern Languages and Linguistics (R. L. Leed, chairman) offers courses in linguistics and elementary, intermediate, and advanced language courses. (Literature departments also offer some language courses.)

S-U options may be chosen for all courses offered by the department except for German 121–122–123 and Burmese, Thai, and Vietnamese.

The Department of German Literature (S. L. Gilman, chairman) offers courses in Germanic literatures.

The Department of Romance Studies (Philip Lewis, chairman) offers courses in French literature, Italian literature, and Spanish literature. In addition, the department's program seeks to encourage study of the interactions of the Romance literatures among themselves and with other literatures, both in its course offerings and in opportunities for independent study. Each term, one course will be offered in English which emphasizes comparative and methodological questions.

The Department of Russian Literature (Stephen Lottridge, chairman) offers courses in Russian literature.

Courses

Courses in Swahili are offered by the Africana Studies and Research Center. Greek and Latin are offered by the Department of Classics. Akkadian, Arabic, Aramaic, and Hebrew are offered by the Department of Near Eastern Studies. Courses in Chinese and Japanese literature are offered by the Department of Asian Studies.

Arabic

See Near Eastern Studies.

Burmese

R. B. Jones

Cambodian

F. E. Huffman

Cebuano (Bisayan)

J. U. Wolff

Chinese

N. C. Bodman, S. L. Fessler, E. M. Gunn, C. Lin, J. McCoy, T. L. Mei, P. S. Ni, P. Wang

For a major involving Chinese Studies, see Asian Studies.

Dutch

F. C. van Coetsem

English as a Second Language

M. A. Martin

Placement in courses offered in English as a second language is by an examination, which is given before registration. For the date, time, and place of the examination, contact the Department of Modern Languages and Linguistics, 203 or 323B Morrill Hall. Courses may only be taken for credit.

French

J. Béreaud, A. M. Colby-Hall, I. Daly, N. Furman, D. I. Grossvogel, J. Harari, J. Herschensohn, S. Huffman, R. Klein, P. Lewis, S. A. Littauer, M. Marion, E. P. Morris, J. S. Noblitt, A. Seznec, L. R. Waugh

The Major

The French major is designed to give students proficiency in the oral and written language, to acquaint them with French literature and culture, and to develop skills in literary and linguistic analysis.

While prospective majors should try to plan their programs as far ahead as possible, no student will be refused admission merely because of a late start. It is even possible for a student to begin French at Cornell and become a major.

The major has a core, required of all majors, and two options which attempt to reflect the variety of student interests, yet maintain the focus for a coherent and substantial program of studies.

The Core:

A) All majors are expected to acquire a sound degree of competence in language. This competence is demonstrated by the successful completion of French 312, or by the passing of a special examination to be taken no later than the end of the junior year. A typical program will involve two semesters of language at the 200 level (to be taken no later than the end of the sophomore year) and two semesters of language at the 300 level (311–312). Students may bypass any part of the sequence through placement examinations.

B) In addition, all majors are expected to take French 201 and French 202. At least one of these should be successfully completed no later than the end of the sophomore year.

The Options:

The following groups intentionally overlap in part; yet each is intended to emphasize different aspects of French culture.

The literature option:

1) The successful completion of six additional courses in French literature or civilization at the 300 level or above. These courses will include at least one from each of the three major periods of French literature (Medieval-Renaissance; seventeenth century-eighteenth century; and nineteenth century-twentieth century).

2) The successful completion of a two-course sequence in one of the following: (a) French literature; (b) French linguistics; (c) French history, culture, music, or history of art or architecture, (d) courses in linguistic theory, history of language, psycholinguistics, or philosophy of language.

The linguistic option:

1) The successful completion of six courses in French and general linguistics (in addition to Linguistics 101–102). These courses will include at least one course in the history of French and one course in the structure of French.

2) The successful completion of two courses (preferably a sequence) in one of the following: (a) French literature and civilization, (b) psycholinguistics, (c) philosophy of language, (d) anthropological linguistics.

Whatever option a student chooses, he or she is encouraged to organize a program of study that will enrich the major with a variety of related courses in history, archaeology, Classics, comparative literature, English and American literature, anthropology, music, history of art, philosophy, government, linguistics, and other literature and languages.

French majors may study in France for a semester or a year during their junior year under any of the several study-abroad plans that are recognized by the Departments of Romance Studies and Modern Languages and Linguistics, and that allow for the transfer of credit. The director of undergraduate studies has information about such plans.

Students wishing to major in French should consult the director of undergraduate studies, Professor Jacques Béreaud, who will admit them to the major. After their admission, students will choose an adviser from among the French faculty. Students interested in the linguistics option should consult Professor Linda Waugh.

Honors Program

The purpose of the honors program is to encourage well-qualified students to do independent work in French, outside the structure of courses. The preparation of the senior honors essay, generally involving three terms, provides a unique learning opportunity, since it allows for wide reading, careful outlining, and extensive rewriting to a degree not practically possible in the case of course papers. At each stage of their work, the students will have regular weekly meetings with faculty tutors.

No special seminars or courses are required of honors students. The junior tutorial (ordinarily, two terms; exceptionally, one) will be devoted to intensive study of selected problems or authors, and to the choice of a topic for the honors essay; the senior tutorial is devoted to the writing of that essay. Honors students may be released from one or two courses in either the junior or senior year to have adequate time for honors work. (Credit is obtained by enrolling in French 419–420.) Students will take an informal oral examination at the end of the senior year.

Honors students are selected on the basis of their work in French language and literature courses in the freshman and sophomore years. Students interested should consult Professor Lewis for details no later than the spring term of the sophomore year, and earlier if possible. Honors work in French linguistics will be supervised by Professor Waugh.

Distribution Requirement

The distribution requirement in the humanities in French is satisfied by French 200, 201 and 202, 222, or any 300-level literature course.

Germanic Studies

E. Augsberger, D. H. Bansberg, A. J. Berger, V. T. Bjarnar, E. A. Blackall, H. Deinert, I. Ezergailis, S. L. Gilman, A. Groos, W. Harbert, P. Hohendahl, J. Jasanoff, R. L. Jones, I. Kovary, H. L. Kufner, P. W. Nutting, J. P. Stern (professor-at-large), G. Valk, F. C. van Coetsem

The German Major

Students majoring in German are encouraged to design their program in a manner that will allow for diversity in their course of study. It should enable them to become acquainted with an adequate selection of major works, authors, and movements of German literature and to develop their skill in literary analysis.

Students majoring in German will normally proceed through German 201, 202, 203, 204. Students who, because of previous training, are qualified to enroll in 300- or 400-level courses will be permitted to do so. For details, students may consult the major advisers, H. Deinert in the Department of German Literature, or H. L. Kufner in the Department of Modern Languages and Linguistics. Students majoring in German are expected to complete successfully a minimum of six 300- and 400-level courses in addition to German 303–304. These courses should be a representative selection of subjects in German literature and/or Germanic linguistics. The attention of students majoring in German is called to the courses offered by the Department of Comparative Literature, many of which complement the course offerings in German.

Students majoring in German are expected to become competent in the German language. This competence is normally demonstrated by the successful completion of German 304. Placement of German majors who have done no work in German at Cornell will be determined by the level of preparation they have obtained elsewhere. For information please consult the major advisers, H. Deinert or H. L. Kufner. All German majors, particularly those who have had no German prior to coming to Cornell, are encouraged to spend at least part of their junior year abroad. Students have the opportunity to enroll, for credit, in a Cornell-sponsored Summer Language Program in Germany. Information is available upon request in the Office of the Summer Session, 105 Day Hall, and in the departmental offices.

The German Area Studies Major

The major in German area studies is intended for students who are interested in subject matter related to German-speaking countries, but not necessarily or not exclusively in German literature or linguistics. Students will select appropriate courses offered by such departments as History, Government, Economics, Music, and Theatre Arts. These students will select a committee of two or more faculty members to help them design a program and supervise their progress. One committee member must be from the German faculty of either the Department of Modern Languages and Linguistics or the Department of German Literature. The other member(s) should represent the student's main area of interest.

The student majoring in German area studies is expected to become competent in the German language. Such competence is normally demonstrated by successful completion of German 304. A minimum of six area courses above the 200 level is required for the major.

The Honors Program

The honors program in German is open to superior students who wish to work independently in an area of their own choice. Students are free to select any member of the Field of Germanic Studies to assist them in designing their honors program, to supervise their work, and to help them select a suitable topic for an honors essay. The independent study courses 451, 452 may form part of the program.

Freshman Seminar Requirement

The following courses will satisfy the Freshman Seminar requirement: German 108, 109, 151, 211, and 312. For details, please consult the instructors.

Distribution Requirement

The distribution requirement in the humanities is satisfied in German by any two German literature courses at the 200 level and above.

Modern Greek

See Classics.

Modern Hebrew

See Near Eastern studies.

Hindi-Urdu

J. W. Gair, G. B. Kelley

Indonesian

J. U. Wolff

Italian

A. Grossvogel, G. Mazzotta

The Major

Students who wish to major in Italian should choose a faculty member to serve as major adviser; the general plan and the details of the student's course of studies will be worked out in consultation. Italian majors are encouraged to take courses in related subjects such as history, art history, music, philosophy, anthropology, Classics, linguistics, and other modern languages and literatures. While, theoretically, a Cornell major occupies only the junior and senior years, as a matter of practical fact it is wise for students to seek faculty advice on the major as early as possible.

Students who elect to major in Italian ordinarily should have completed Italian Literature 201–202 and Italian Language 203–204 by the end of their sophomore year. Exemptions can be made on the basis of an examination. Students majoring in Italian are expected to become conversant with a fair portion of the masterworks of Italian literature, to acquaint themselves with the outlines of Italian literary history, and to develop some skill in literary analysis. To this end students will be expected to complete successfully twenty-four credits of Italian literature courses at the 300 level or higher, with papers to be written in Italian or English. One or more courses offered by the Department of Comparative Literature may be counted toward the required twenty-four credits if students obtain the prior approval of their major adviser.

Students majoring in Italian also will be expected to acquire competence in the handling of the language. That competence may be demonstrated by passing an oral and written examination to be arranged with the adviser.

Italian majors may study in Italy, generally during their junior year, under any one of those study-abroad plans, organized by American universities, that allow the transfer of grades and credit, such as the Syracuse Semester in Italy in Florence.

Distribution Requirement

The distribution requirement in the humanities is satisfied in Italian by Italian 201–202.

Japanese

K. Brazell, M. B. deBary, M. Hamada, E. H. Jorden, R. Sukle

For a major involving Japanese Studies, see Asian Studies.

Javanese

J. U. Wolff

Linguistics

L. H. Babby, N. C. Bodman, J. S. Bowers, E. W. Browne, J. W. Gair, J. E. Grimes, W. Harbert, J. Herschensohn, C. F. Hockett, F. E. Huffman, J. Jasanoff, R. B. Jones, Jr., E. H. Jorden, G. B. Kelley, L. D. King, W. H. Klemme, H. L. Kufner, R. L. Leed, S. McConnell-Ginet, J. McCoy, G. M. Messing, J. S. Noblitt, C. Rosen, D. F. Solá, M. Suñer, F. C. van Coetsem, L. R. Waugh, J. U. Wolff

The Major

The major in linguistics has three prerequisites: (1) Linguistics 101–102; (2) qualification in two languages, one from the familiar European group (Latin, Greek, French, Italian, Portuguese, Spanish, German, Russian) and one from the other languages offered at Cornell, with six credits beyond qualification in one or the other of these two; (3) a two-semester sequence in a related discipline (e.g. the literature of the language in which six credits beyond qualification was offered as a prerequisite, anthropology, computer science, mathematics, philosophy, psychology, or sociology).

Completion of the major requires: (1) Linguistics 303, 304, 311; (2) a course in historical linguistics, either a course in historical method such as Linguistics 404 or the history of a specific language or family; (3) a minimum of eight additional credits in linguistics chosen in consultation with the adviser. Prospective majors should see J. W. Gair.

(For other relevant courses see anthropology, psychology, human development and family studies, computer science, and philosophy.)

The Honors Program

Applications for honors should be made during the junior year. Candidates for admission must have a 3.0 (B) average overall and should have a 3.2 average in linguistics courses.

In addition to the regular requirements of the major, the candidate for honors will complete an honors thesis and take a final oral examination in defense of it. The thesis is usually written during the senior year, but may be begun in the second term of the junior year when the student's program so warrants. The oral examination will be conducted by the honors committee consisting of the thesis adviser and at least one other faculty member in linguistics. Members of the other departments may serve as additional members if the topic makes this advisable. Linguistics 493 and/or 494 may be taken in conjunction with thesis research and writing, but are not required.

Distribution Requirement

Linguistics 101–102, or the combination Linguistics 111–112 or 101 and any other course for which Linguistics 101 is a prerequisite, satisfies the distribution requirement in the social sciences.

Pali

J. W. Gair

Polish

E. W. Brown

Portuguese

L. D. King

Quechua

D. F. Solá

Romanian

S. Huffman

Russian

L. H. Babby, E. W. Browne, P. J. Carden, G. Gibian, R. L. Leed, A. Nahkimovsky, V. Ripp, M. Senderovich, S. Senderovich

Russian Major

Russian majors study Russian language, literature, and linguistics with emphasis according to their specific interests. It is desirable, although not necessary, for prospective majors to complete Russian 101–102, 201–202, 203–204 as freshmen and sophomores since these courses are prerequisites to most of the junior and senior courses that count toward the major. Students may be admitted to the major upon satisfactory completion of Russian 102 or the equivalent. Students who elect to major in Russian should consult with both Professor Carden and Professor Leed as soon as possible. For a major in Russian, students will be required to complete: (1) Russian 301–302 or 303–304 or the equivalent; (2) eighteen credits from 300- and 400- level literature and linguistics courses of which twelve credits must be in literature in the original.

Russian and Soviet Studies Major

Interested students see Special Programs and Interdisciplinary Studies after departmental listings.

Honors Program

Students taking honors in Russian undertake individual reading and research, write an honors essay, and take a comprehensive examination at the end of the senior year.

Distribution Requirement

The distribution requirement in the humanities is satisfied in Russian by any two Russian literature courses at the 200 level and above.

Sinhala (Sinhalese)

J. W Gair

Spanish

U. J. De Winter, L. D. King, W. Klemme, J. W. Kronik, C. Morón-Arroyo, M. Randel, E. Rudat, E. M. Santí, M. Suñer, J. Tittler, M. Van Antwerp-Hill

The Spanish courses 212 and 312 are staffed and administered by the Department of Romance Studies (278 Goldwin Smith Hall).

The Major

The Spanish major is designed to give students proficiency in the oral and written language, to acquaint them with Hispanic culture, and to develop their skill in literary and linguistic analysis. Satisfactory completion of the major should enable students to meet language and literature requirements for teaching, to continue with graduate work in Spanish, or to satisfy standards for acceptance into the training programs of the government, social agencies, and business concerns. A Spanish major combined with another discipline may also allow a student to undertake preprofessional training for graduate study in law or medicine.

Students interested in a Spanish major are encouraged to seek faculty advice as early as possible. For acceptance into the major, students should consult with the director of undergraduate studies in Spanish, M. Van Antwerp-Hill (269 Goldwin Smith Hall) who will admit them to the major, and choose an adviser from the Spanish faculty of either the Department of Romance Studies or the Department of Modern Languages and Linguistics. Spanish majors will then work out a plan of study in consultation with their advisers. Previous training and interests, as well as vocational goals, will be taken into account when the student's program of courses is determined.

Spanish 201 and 204 (or equivalent) are prerequisite to entering the major in Spanish. All majors will normally include the following core courses in their programs:

1) two literature courses of the 315–316–317 series
2) 303 and 312 (or equivalent)

Spanish majors have great flexibility in devising their programs of study and areas of concentration. Some typical options of the major are:

1) Spanish literature, for which the program of study normally includes at least 24 credits of Spanish literature beyond the core courses.
2) Spanish linguistics, for which the program normally includes 401, 407, 408, and at least 12 additional credits in general or Spanish linguistics. (Linguistics 101–102 are recommended before entering this program.) Students interested in including linguistics in their programs should consult with the coordinator of Spanish for the Department of Modern Languages and Linguistics (M. Suñer).
3) A combination of literature and linguistics.
4) Any of the above options with certain courses in other disciplines counted towards the major.

Whichever option a student chooses, he or she is encouraged to enrich the major program by including a variety of courses from related fields or by combining Spanish with related fields such as history, philosophy, sociology, anthropology, art, music, Classics, English, comparative literature, and other foreign languages and literatures.

Spanish majors are encouraged to spend all or part of the junior year in a Spanish-speaking country on one of the study-abroad programs organized by American universities that allow the transfer of grades and credits.

The J. G. White Prizes and Scholarships are available annually to students who achieve excellence in Spanish.

Honors Program

The honors program in Spanish is open to superior students who wish to undertake guided independent reading and research in an area of their choice. Students in the senior year select a member of the Spanish faculty from either the Department of Romance Studies or the Department of Modern Languages and Linguistics to supervise their work and direct the writing of the honors essay (see Spanish 429–430).

Distribution Requirement

The distribution requirement in the humanities is satisfied in Spanish by any two of the following courses: 201, 315, 316, 317, or any 300-level literature course.

For the social sciences the distribution requirement may be satisfied by Linguistics 101 and any one Spanish linguistics course for which Linguistics 101 is prerequisite.

Tagalog

J. U. Wolff

Tamil

J. W. Gair

Telugu

G. B. Kelley

Thai

R. B. Jones, Jr., R. Mendiones

Vietnamese

F. E. Huffman

Music

N. Zaslaw, chairman; W. W. Austin, M. Bilson, C. Greenspan, J. Hsu, K. Husa, M. Keller, S. Monosoff, E. Murray, R. M. Palmer, D. R. M. Paterson, D. M. Randel, T. A. Sokol, M. W. Stith, B. Troxell, J. Webster

The Major

There are two options available to the student planning to major in music. At the core of both options is a program which carries the study of music to an advanced level through the deliberate integration of performance, music theory, and music history. This core program sets standards which the Department of Music believes all serious students of music must meet, regardless of the role that music may ultimately play in their lives. Option I is designed to allow the student greater opportunity to elect courses in fields other than music. Option II is designed for the student interested in a more specialized program with a view toward graduate study and a career in music.

Option I presupposes some musical background and the satisfactory completion of Music 151–152 by the end of the sophomore year. Students must take a piano examination before admission to the major and will be expected to remedy through further study any deficiencies that may be revealed.

The requirements for the Bachelor of Arts degree with a major in music under Option I include four semester courses in music theory (251 – 252 and 351 – 352) three semester courses in music history (381 – 382) plus one other numbered 300 or above, and four semesters of participation in a musical organization or ensemble.

Option II presupposes considerable musical studies before entering and the satisfactory completion of Music 251 – 252, normally by the end of the sophomore year. Students must take a piano examination before admission to the major and will be expected to remedy through further study any deficiencies that may be revealed.

The requirements for the Bachelor of Arts degree with a major in music under Option II include three semester courses in music theory (351 – 352 and 451 – or 453), three semester courses in music history (381 – 382 plus one other numbered 300 or above), and two semesters of participation in a musical organization.

In addition, the student majoring in music under Option II will concentrate in one of the following areas.

A. *Theory and Composition.* The student concentrating in theory and composition will elect, during the junior and senior years, four additional semester courses in this area plus Music 462 or 463. These courses may include Music 401 – 402.

B. *Music History.* The student concentrating in music history will elect, during the junior and senior years, four additional semester courses in this area plus Music 462 or 463. These courses may include Music 401 – 402. Two of the four may be drawn from the offerings of other departments.

C. *Performance.* The student who has shown exceptional promise as a performer during the freshman and sophomore years, as demonstrated in part by a solo recital, may concentrate in performance by electing, during the junior and senior years, four semesters of private instruction in his or her major instrument, plus two semesters of chamber music (Music 441 – 442).

Students contemplating a program in music under either option should arrange for placement examinations and auditions during the orientation period of the freshman year, or earlier if possible. Before entering the major, each student should choose an adviser from among the department's faculty members.

The Honors Program

The honors program in music is intended to provide a special distinction to the department's ablest undergraduate majors. To become a candidate for honors in music a student must be invited by the faculty at the beginning of the second semester of the junior year. As soon as possible thereafter, the student will form a committee of three faculty members to guide and evaluate the honors work. In the senior year the candidate will enroll in Music 401 – 402 with the chairperson of the honors committee as instructor. Candidates will be encouraged to formulate programs that will allow them to demonstrate their total musical ability. The level of honors conferred will be based on the whole range of the independent work in this program of which a major part will culminate in an honors thesis, composition, or recital, to be presented not later than April 1, and a comprehensive examination to be held not later than May 1.

Distribution Requirement

The distribution requirement in the expressive arts is satisfied in music with any six credits in Music. A maximum of three credits in courses from Music 331 through 338 and 441 through 448 may be used to satisfy this requirement.

Facilities

A large collection of recorded music and scores is housed in the Department of Music, where listening facilities are provided in the Music Library. These facilities may be used by any student at hours to be announced each term.

Choral and instrumental ensembles are trained and directed by members of the departmental staff each term, and all students who are interested are invited to join one or more of these groups. These ensembles include the Sage Chapel Choir, the Cornell Chorus, the Cornell University Glee Club, the bands (marching band, wind ensemble, symphonic band, brass ensembles), the Cornell Symphony Orchestra, the Cornell Chamber Orchestra, the Gamelan Ensemble, the Collegium Musicum, the Chamber Singers, and chamber music groups. For rehearsal hours and conditions for academic credit, see Music 331 through 338 and 441 through 448. Announcements of tryouts for all organizations will be made at the beginning of fall and spring terms.

Near Eastern Studies

D. I. Owen, chairman; J. Cohen, M. F. Collins, R. D. Hoberman, M. B. Schub, J. M. Weinstein

The Department of Near Eastern Studies offers Cornell undergraduates access to the history and archaeology, civilization and culture, philosophy and thought of the cultures that produced Judaism, Christianity, and Islam, and that today help define and characterize the many millions of people who live in the countries of the Middle East. The area, often called the "Cradle of Civilization," is the homeland of many of the earliest written languages, including the Semetic languages of the Bible and of the Koran, as well as other literatures of intrinsic merit and interest. These languages have exerted profound influence on the literatures of many civilizations, ancient and modern, Eastern and Western, including our own. The study of the Near East is, therefore, of seminal importance for our understanding of the emergence of Western civilization.

The department's offerings cover the historical span from the prehistory of the ancient Near East through the history of modern Israel, with primary focus on the ancient and medieval periods. Although generally restricted to the region of the Near East, courses in Jewish studies and medieval Jewish history necessarily encompass Western Europe. Studies pursued in this department will be found of lasting value to all whose career interests involve the cultures of the ancient Near East, the modern Middle East, and the field of Jewish studies.

Majors

The department offers students majors in four areas: Near Eastern languages and literatures, Near Eastern and biblical civilizations, history of the Jewish people, and Hebrew language and literature.

Near Eastern Languages and Literatures

Those who major in Near Eastern languages and literatures must successfully complete (a) proficiency in Classical

Hebrew and qualification in a second Semitic language; (b) an additional twenty-four credits selected from courses listed under Akkadian, Arabic (211 and above), Aramaic, Ethiopic, Hebrew (202 and above), Ugaritic, ancient Near Eastern literature, biblical literature, rabbinic literature, Arabic literature, history of ancient Near Eastern civilizations, Near Eastern and biblical archaeology; (c) and fifteen credits in related subjects listed under history of the Jewish people, general Judaic studies, modern Hebrew literature, or any courses in the humanities selected in conference with the adviser.

Near Eastern and Biblical Civilizations

Those who major in Near Eastern and biblical civilizations must successfully complete (a) qualification in Classical Hebrew or one other Semitic language; (b) an additional twenty-four credits selected from the courses listed under biblical literature, history of the Jewish people, history of ancient Near Eastern civilizations, ancient Near Eastern literature, Near Eastern and biblical archaeology, and advanced Semitic language courses; (c) and fifteen credits in related subjects. Related subjects for this purpose may be any courses in the humanities selected in conference with the adviser.

History of the Jewish People

Those who major in history of the Jewish people must successfully complete (a) proficiency in Hebrew; (b) an additional twenty-four credits in advanced courses listed under Hebrew (above 201), history of the Jewish people, history of ancient Near Eastern civilizations, Near Eastern and biblical archaeology; (c) and fifteen credits of related subjects listed under ancient Near Eastern literature, biblical literature, rabbinic literature, modern Hebrew literature, general Judaic studies, or any courses in the humanities selected in conference with the adviser.

Hebrew Language and Literature

Those who major in Hebrew language and literature must successfully complete (a) competence in Hebrew equivalent to the completion of 301; (b) an additional twenty-four credits of advanced courses — of which 302 must be completed — listed under Classical Hebrew, ancient Near Eastern literature, biblical literature, rabbinic literature, and modern Hebrew literature; (c) and three courses in related subjects listed under history of the Jewish people, general Judaic studies, or any courses in the humanities selected in conference with the adviser.

Study Abroad

Near Eastern studies majors may choose to study in the Near East in their junior year. There are various academic programs in Israel and Egypt that are recognized by the Department of Near Eastern studies and that allow for the transfer of credit. Archaeological field work on Cornell-sponsored projects in the Near East or recognized field schools in Israel may also qualify for course credit.

The Honors Program

Candidates for the degree of Bachelor of Arts with honors in Near Eastern languages and literatures, Near Eastern and biblical civilizations, history of the Jewish people, and Hebrew language and literature, must fulfill the requirements of the appropriate major study, and enroll in the honors course 400 in the first semester of their senior year. For admission to the honors program, candidates must have a cumulative average of B– or better and have demonstrated superior performance in Near Eastern studies courses. After consulting with their major adviser, candidates should submit an outline of their proposed honors work to the department during the second semester of their junior year.

Distribution Requirements

The distribution requirement in humanities is satisfied in Near Eastern studies by any two courses at the 200 level or above, except language courses. However, 231–232 and 301–302, which emphasize literature, will satisfy the distribution requirement.

Program of Jewish Studies

The field of Jewish studies encompasses a broad spectrum of disciplines that includes language, literature, philology, and history. The Department of Near Eastern Studies offers students the opportunity to take a wide variety of courses in Jewish studies on all levels. Furthermore, cooperating faculty in other departments periodically offer additional courses in Jewish studies whose subjects are not represented in this department. Students interested in planning a program in Jewish studies should consult with the coordinator, J. Cohen.

Philosophy

D. B. Lyons, chairman; J. G. Bennett, R. N. Boyd, G. Fine, C. A. Ginet, H. Hodes, T. H. Irwin, N. Kretzmann, R.W. Miller, S. Shoemaker, R. C. Stalnaker, N. L. Sturgeon, A. W. Wood

The Major

Students expecting to major in philosophy should begin their study of it in their freshman or sophomore year. Admission to the major is granted by the director of undergraduate studies of the department on the basis of a student's work during the first two years.

Eight philosophy courses are required for the major. They must include at least one course in ancient philosophy, at least one course in the history of philosophy other than ancient philosophy, and a minimum of three courses numbered above 300, at least one of which must be numbered above 400 (with the exception of 490). Philosophy 231, while not required, is especially recommended for majors or prospective majors.

Philosophy majors must also complete at least eight credits of course work in related subjects approved by their major advisers.

Occasionally, majors may serve as teaching or research aides, working with faculty members familiar with their work.

The Honors Program

A candidate for honors in philosophy must be a philosophy major with a B– or better for all work in the College of Arts and Sciences and an average of B or better for all work in philosophy. In either or both terms of the senior year a candidate for honors enrolls in Philosophy 490 and undertakes research leading to the writing of an honors essay by the end of the final term. Prospective candidates should apply to the Department of Philosophy.

Distribution Requirement

The distribution requirement in the humanities is satisfied in philosophy by completing any two courses in philosophy, with the following exceptions: (a) Philosophy 100 if used in

satisfying the Freshman Seminar requirement; (b) a combination of two courses in formal logic, such as 231, 431, 432, and 436.

Physics

D. B. Fitchen, chairman; V. Ambegaokar, N. W. Ashcroft, K. Berkelman, H. A. Bethe (emeritus), R. Bowers, G. C. Brown, D. G. Cassel, G. V. Chester, R. M. Cotts, J. W. DeWire, M. E. Fisher, M. Gilchriese, B. Gittelman, K. Gottfried, S. Gregory, K. Greisen, L. N. Hand, D. L. Hartill, P. L. Hartman, D. F. Holcomb, T. Kinoshita, J. B. Kogut, J. A. Krumhansl, D. M. Lee, R. M. Littauer, B. D. McDaniel, H. Mahr, N. D. Mermin, H. F. Newhall, J. Orear, R. O. Pohl, J. D. Reppy, R. C. Richardson, E. E. Salpeter, J. C. Scott, R. H. Siemann, A. J. Sievers, E. Siggia, R. H. Silsbee, A. Silverman, P. C. Stein, R. M. Talman, S. A. Teukolsky, M. Tigner, D. H. White, J. W. Wilkins, K. G. Wilson, W. M. Woodward, T. M. Yan, D. R. Yennie

Three introductory physics sequences are open to freshmen: 101–102, 112–213–214–315, and 207–208. In addition, there is a cluster of general-education courses 201 through 205. Physics 101–102 (noncalculus) has a prerequisite of three years of college-preparatory math. Both 112 and 207 require calculus (e.g. Math 191 or 111), and additional math is required for subsequent courses in sequence. 101–102 or 207–208 may be taken as terminal physics courses. The three- or four-term sequence 112–213–214 (–315) is recommended for physics majors and engineers.

For those wishing to pursue some physics beyond the introductory level, several courses may be appropriate: 205 Energy, 330 Modern Experimental Optics, 360 Introductory Electronics.

Advanced placement and credit are offered as outlined in the leaflet, *Advanced Placement of Freshmen,* or students may consult Professor Cotts, 522 Clark Hall. Transfer students requesting credit for physics courses taken at another college should consult the department office.

The Major

Various options permit the student to concentrate heavily on physics, or to take less physics and pursue an accompanying constellation of courses in a related area. Those desiring a physics concentration as preparation for professional or graduate work should complete 112–213–214 or 112–217–218 (and preferably 315) by the end of the sophomore year. A basic preparation for a less intensive physics program may include 112–213–214 or 207–208. In either case, it is necessary to complete a concurrent sequence of mathematics courses: Math 191–192–293–294 or 193–194–295–296 are normally recommended, except for students especially interested in continuing the study of pure mathematics, for whom Math 111–122–221–222 (or equivalent) may be preferred.

Prospective majors are urged to make an early appointment at the physics office for advice in planning their programs. Acceptance into the major is normally granted after completion of a year of physics and math at a satisfactory level; the student should propose a tentative plan for completing his or her graduation requirements as well as those for the major. The plan may change from time to time, but it must be approved by the major adviser. The major requirements have two components — a core and a concentration.

Core

(a) 112–213–214 (or 112–217–218) or 207–208; (b) an intermediate physics course in each of four areas: mechanics 431 or 318; electricity and magnetism 432 or 325; modern physics 315 or 443; and laboratory physics 310, 330, 360, or 410. Math courses prerequisite for the physics courses are also necessary. The choice of core is influenced by the intended concentration. For a concentration in physics, 112–213–214 (or 112–217–218), 318, 325, 315 or 443, and 310 or 410 is appropriate, while for concentrations outside physics part (b) of the core might consist of 315, 431, 432, and 410.

Concentration

This component reflects the student's interest in some area related to physics; the array of courses must have internal coherence. The concentration must include at least fifteen credits, unless otherwise stated, with at least eight credits at the junior-senior level (above 300). Examples of concentrations: physics; mathematics; biology; chemistry; astrophysics; natural sciences; engineering; computer science; science, technology, and society; environmental studies; intellectual history; history and philosophy of science; city planning and urban development; business and economics.

The concentration in physics is recommended as preparation for professional or graduate work in physics or a closely related discipline. Twelve credits from physics courses above 300, in addition to those selected for part (b) of the core, are required; the program must include 410. Also, the following are strongly advised: 443; Math 421, 422, and 423; and at least one from 341, 444, 454, Applied and Engineering Physics 401, Astronomy 431–432, Geological Sciences 485–486. Students with a concentration in physics who wish to emphasize preparation for astronomy or astrophysics should consult the astronomy section of this *Announcement.*

A combined biology-chemistry concentration is recommended for premedical students or those who wish to prepare for work in biophysics. The concentration in natural science is particularly appropriate for teacher preparation.

The Honors Program

A student may be granted honors in physics upon the recommendation of the Physics Advisers Committee of the physics faculty.

Foreign Language Requiremnent

Students interested in eventual graduate work in physics are advised to meet this requirement with French, German, or Russian.

Distribution Requirement

The requirement in physical sciences is met by any two sequential courses such as 101–102 or 207–208; or by any two general-education courses from the group 201–205. "Crossovers" between sequences are permitted if prerequisites are satisfied; however, such crossovers (or the use of a truncated sequence such as 112–213) should be regarded as accidents in the evolution of a student's schedule, not as sound planning.

Prerequisites

Prerequisites are specified in physics course descriptions to illustrate the materials that students should have

mastered. Students who wish to plan programs different from those suggested by the prerequisite ordering are urged to discuss their preparation and background with a physics adviser or with the instructors in the courses. In many cases an appropriate individual program can be worked out without exact adherence to the stated prerequisites.

Psychology

B. P. Halpern, chairman; E. K. Adkins, D. Bem, S. Bem, A. W. Boykin, U. Bronfenbrenner, L. A. Cooper, J. P. Cunningham, R. B. Darlington, R. Dworkin, J. M. Farber, H. M. Feinstein, B. L. Finlay, E. J. Gibson, J. J. Gibson, R. E. Johnston, S. C. Jones, F. Keil, R. Kraut, W. W. Lambert, H. Levin, D. Levitsky, J. B. Maas, R. D. Mack, L. Meltzer, U. Neisser, D. T. Regan, T. A. Ryan, S. R. Shattuck-Hufnagel, K. E. Weick, D. Zahorik

The Major

Prerequisites for admission are: (a) any three courses in psychology (Education 110 may be counted toward the three-course requirement); students often begin with Psychology 101; (b) no grade below C+ in any pschology course; (c) acceptance by the Majors and Advising committee of the Department of Psychology.

Application forms may be obtained at the departmental office and should be filed two weeks before the preregistration period.

Requirements for the major are: (a) a total of forty credits in psychology (including prerequisites) in which students majoring in psychology are expected to choose, in consultation with their advisers, a range of courses that covers the basic processes in psychology (laboratory and/or field experience is recommended); (b) completion, before the beginning of the senior year, of an approved course in statistics, or the passing of an achievement examination administered by the department.

With the permission of the major adviser, courses in other departments may be accepted toward the major requirements.

Concentration in Biopsychology

Psychology majors interested in psychology as a biological science can elect to specialize in biopsychology. Students in this concentration must meet all of the general requirements for the major in psychology and must also demonstrate a solid background in introductory biology; physical sciences, including at least introductory chemistry; and mathematics. Students will design, with their advisers, an integrated program in biopsychology built around courses on physiological, chemical, anatomical, and ecological determinants of human and nonhuman behavior offered by the Department of Psychology. Additional courses in physiology, anatomy, organic chemistry, biochemistry, neurochemistry, neurobiology, and behavioral biology may be designated as part of the psychology major after consultation by the student and his or her biopsychology adviser.

Concentration in Personality and Social Psychology

In cooperation with the Department of Sociology, a concentration in personality and social psychology is available. Psychology majors who wish to specialize in social psychology are expected to meet the general requirements set by the department, including statistics. To ensure a solid interdisciplinary grounding, students in the concentration will be permitted to incude in the major courses in sociology and related fields. Advisers will assist the student in the selection of a coherent set of courses from social organization, cultural anthropology, experimental psychology, social methodology, and several aspects of personality and social psychology. Seniors in the concentration may elect advanced and graduate seminars, with the permission of the instructor.

The Honors Program

The honors program is intended to give students an opportunity to examine selected problems in depth, and to carry out independent research under the direction of a faculty member. During the spring term of the junior year, an honors student will enroll in Psychology 494 and will develop a proposal and begin work on a research project. The student will consult with an honors adviser and a faculty sponsor. At the end of the spring term, a report of the semester's work will be submitted for faculty review.

By the fall term of the senior year, honors students will have begun work on their final research projects. They will also enroll in a senior honors seminar (Psychology 498) in which research projects will be discussed. Thesis research will continue in the spring with enrollment in Psychology 499, Senior Honors Dissertation. Final honors standing is based on a written thesis and an oral defense of the thesis, as well as on general academic performance.

Prospective applicants are advised to file applications early in the fall term of their junior year. Decisions on these applications will be made by the faculty at the end of the fall semester. It is possible for a student who has satisfactorily completed independent study or research to be admitted to the program at the end of the junior year. For consideration by the honors committee of the Department of Psychology, applicants must have a minimum cumulative grade average of at least a B+ in all courses in psychology

Distribution Requirement

The distribution requirement in social science is satisfied by any two courses in psychology (Education 110 may be counted).

Sociology

D. P. Hayes, chairman; R. Alba, P. D. Allison, R. Avery, B. Bowser, S. Caldwell, B. Edmonston, R. K. Goldsen, J. B. Jacobs, J. A. Kahl, R. Kraut, W. W. Lambert, R. McGinnis, L. Meltzer, B. C. Rosen, J. M. Stycos, H. Velez, W. F. Whyte, R. M. Williams, Jr.

The Major

Sociology can serve either as a broad, liberal-arts approach to the study of people in society, or as preprofessional training appropriate for graduate study in sociology itself or in such fields as law, business, public administration, planning, and social welfare. To help the student organize a specific program within this large range, the department offers a series of alternative concentrations (with change from one to another usually permitted), as described below.

The director of undergraduate studies will help the prospective major to choose among the concentrations and will designate a faculty adviser to each student who is accepted into the program. A helpful pamphlet is issued each semester listing all the courses in sociology on

campus (including those in other departments), organized by major topics. It is available in the department office, third floor, Uris Hall.

Concentration I—Human Society

The concentration permits a broad study of society on a comparative basis, combining humanistic and scientific approaches. Given the range of possibilities, this concentration is not tightly structured and the student will develop a personal plan in consultation with an adviser.

Prerequisites: Any two courses in sociology at the 100 or 200 level with an average grade of B– or better.

Major Program: Thirty-two additional credits in sociology, of which twelve may be in related departments if acceptable to the adviser as part of a coherent plan of study. At least eight credits must be in courses at the 400 level or above.

Concentration II—Research Training

This alternative is for students who aim for careers in social science research or teaching. It prepares students for graduate work in social science, and it provides training leading directly to postbaccalaureate jobs in research organizations.

Prerequisites: Any two courses in sociology at the 100 or 200 level with an average grade of B– or better, and one year of college mathematics, especially calculus and probability statistics (e.g. Mathematics 107–108 or Mathematics 111–112).

Major Program: Students in this concentration must complete at least 44 additional credits of courses in sociology. These must include: (a) three courses in research methods, such as Soc 321, 325, 424, 425; (b) two courses in sociological theory; (c) one semester of the honors sequence (Soc 495) or a graduate seminar; and (d) at least two semesters of supervised research experience with faculty in sociology.

Concentration III—American Institutions and Public Policy

This concentration centers on the analysis of key institutions in American society and the trends and conflicts that underlie current public issues. Considerable attention is given to sociological studies by government, academic, and private agencies that influence public policy.

Prerequisites: Any two courses in sociology at the 100 or 200 level with an average grade of B– or better.

Major Program: Thirty-four additional credits, including (a) two courses in related fields chosen from Africana Studies 290, Economics 101, Government 111 or 302, History 312 or 341, or Industrial and Labor Relations 261; and (b) seven courses in sociology, including two courses in research methods such as Sociology 321 and 325, and two advanced courses chosen from Sociology 404, 441, 442, 462, or related graduate courses or seminars.

Concentration IV—Personality and Social Psychology

Offered in cooperation with the Department of Psychology, this concentration approaches personality and social psychology from a sociological perspective. To ensure a solid interdisciplinary grounding, students will be encouraged to develop some competence in psychology, cultural anthropology, and social institutions and processes.

Prerequisites: Two courses in sociology at the 100 or 200 level with an average grade of B– or better, including at least one from among Soc 280, 281, 285, and 289.

Major Program: Thirty-two additional credits, including two courses in sociological methods (Soc 321 and 325 or equivalents), three courses in personality and social psychology, and two courses in social institutions and processes. Courses in cultural anthropology and experimental psychology may be included within the major if approved by the adviser. At least two courses must be in courses at the 400 level or above.

Concentration V—Population Studies

This concentration permits the intensive study of human populations from a social science perspective. Students are encouraged to combine population studies with a concentration in a related program such as women's studies, American studies, an area program, or biology and society.

Prerequisites: Sociology 130 or 230 plus one other course in sociology with an average grade of B– or better.

Major Program: Thirty-six additional credits in sociology, including (a) Soc 431 and either 321 or 325; (b) Soc 378 or 430; (c) two additional courses in population or closely related fields. Twelve hours of the total requirement for the major may be in related fields if approved by the adviser.

The Honors Program

The honors program is designed to offer the opportunity for original research under direct guidance of a member of the faculty. For admission to the honors program, students should file an application with the department during their junior year or at the beginning of their senior year. Honors candidates must have a general average of at least 2.7 and an average of 3.0 in sociology courses. The level of honors is determined by the faculty on recommendation from the student's honors committee after presentation of the research essay.

Distribution Requirement

The distribution requirement in social sciences is satisfied by any two courses in sociology; students without background are advised to choose from those at the 100 or 200 level. These courses also may serve as prerequisites for or parts of the major in sociology. Freshman seminars do not fulfill either requirement.

Freshman Seminars

Freshman Seminars will be offered in fall and spring semesters. Consult the Freshman Seminar booklet and the department course lists for seminar descriptions, instructors, and times.

Theatre Arts

R. C. Shank, chairman; P. Alexander, M. A. Carlson, S. R. Cole, P. J. Curtis, J. Desmond, K.Draudt, D. L. Fredericksen, I. J. Hauptman, M. Lawler, J. Morgenroth, A. Shank, B. O. States, D. Tschetter, J. A. Zych

Opportunities for performance in theatre, dance and cinematography are available to the entire student body through the facilities of the department. Students may participate in the wide variety of theatrical performances presented each term in the University Theatre of Willard

Straight Hall, the Drummond Studio in Lincoln Hall, and the Dance Studio in Helen Newman Hall, as actors, dancers, directors, playwrights, designers, or technicians. Auditions for particular productions are scheduled throughout the year.

Majors

The department offers students majors in theatre arts and in dance.

Theatre Arts Major

All students who wish to major in theatre arts must complete Theatre Arts 240 and thirty additional credits in the department, which will include substantial work in theatre history, literature, and theory, and in any two of the following four areas: (1) technical production and design, (2) acting and directing, (3) dance, (4) cinema. In addition, majors must complete at least twelve credits of related work outside the department.

Dance Major

Students who wish to major in dance must have completed or proved competency in intermediate modern technique by the beginning of their junior year. Dance majors are required to take a minimum of one technique class each term. The courses required of all dance majors are: (1) 301 (four semesters, one credit each semester); (2) 210–211; (3) 314–315; and (4) 316. In addition to the twenty-three credits listed above, dance majors are required to take twenty credits in related fields to be chosen in consultation with their adviser.

Study Abroad

The College of Arts and Sciences, through this department and in consort with 15 other colleges and universities, offers up to a full year's study at the Centre Universitaire Américain du Cinéma à Paris. The Centre's program is theoretical, critical, and historical. It is most useful to students pursuing an independent major in film studies—as an intensive supplement to their Cornell film courses. Fluency in French is required, and 375 and 376 are prerequisites. Inquiries should be addressed to D. Fredericksen, Cornell's liaison with the Centre.

The Honors Program

Candidates for the degree of Bachelor of Arts with honors in Theatre Arts must fulfill the requirements of the major, maintaining an average of A– in departmental courses and an average of B in all courses. Any such student may, at the beginning of the second semester of the junior year, form a committee of three faculty members to guide and evaluate the honors work. The work will culminate in an honors thesis or practicum to be presented not later than April 1 of the senior year, and an examination to be held not later than May 1.

Charles B. Moss Scholarship. The department administers the Charles B. Moss Scholarship. The recipient is chosen by the department from among those majors in the department who demonstrate exceptional ability.

Theatre Laboratory

Courses 151 and 152 are offered either term. Course 155 is offered fall term, 156 spring term. These courses may be repeated for credit but no student may earn more than four credits applicable towards graduation. Acting, directing, and managerial and technical responsibilities in production of theatre and dance are under the supervision of the departmental staff. Participation is also open to students without credit.

Courses 151, 152, 155 and 156 may be added or dropped without penalty at any time during the semester.

Dance

Enrollment in all dance courses takes place at Helen Newman Hall. Courses in dance technique are offered each semester—modern: four levels, fundamentals through advanced; and ballet: elementary and intermediate. T'ai chi, a Chinese system of movement for health, self-defense, and meditation, is also offered. Freshmen and sophomores may satisfy the physical education requirement by taking any of these courses. Up to four units of credit may be earned (one each semester) for enrollment in intermediate or advanced technique only (see Theatre Arts 301). Schedules for technique classes are available in the Dance Office, Helen Newman Hall.

Students may receive credit for performance in student/faculty concerts. In addition, a repertory and performance workshop will be offered. Staff will choreograph and conduct rehearsals for performance of original dance works. Admission with consent of the instructor. Hours will be arranged through the Dance Office, Helen Newman Hall. One credit may be earned for this (see Theatre Arts 155–156 Rehearsal and Performance).

Distribution Requirement

The distribution requirement in the expressive arts is satisfied by any two of the three- or four-credit courses at the 200 level or above in the Department of Theatre Arts.

Freshman Seminar Requirement

The Freshman Seminar requirement may be satisfied by Theatre Arts 120, 130, 140, or 240. Interested students are directed to the Freshman Seminar booklet.

Special Programs and Interdisciplinary Studies

Africana Studies and Research Center

J. Turner, director; Y. ben-Jochannan, W. Cross, C. Fontenot, R. Harris, F. Hayes, J. Higginson, C. Mbata, R. Murapa, A. Nanji

The Africana Center has a unique and specialized program of study that offers an undergraduate degree through the College of Arts and Sciences and a graduate degree (Master of African and African-American Studies) through the University's Graduate School.

The purpose of the program is to prepare students for professional careers relevant to the learning and leadership needs of the African-American community. It envisions that the knowledge and methodology of various fields and disciplines will be brought to bear upon the history, present state, and dynamics of the black people and cultures in the Americas, Africa, and the Caribbean. The curriculum is designed to reflect a multidisciplinary approach to the experience of African peoples throughout the world. The Africana Center's courses are open to both majors and nonmajors.

Africana Major

The undergraduate program offers interdisciplinary study of the fundamental dimensions of the Afro-American and African experiences. Because of the comprehensive nature

of the program, it is to the students' advantage to declare themselves as Africana majors as early as possible. The following are prerequisites for admission to the major. Students should submit: (1) a statement of why they want to be an Africana studies major; (2) a tentative outline of what area of study they are considering (African or Afro-American) for the undergraduate concentration; (3) a full transcript of courses taken and grades received. The center's undergraduate faculty representative will review the applications and notify students within two weeks of the status of their request.

After acceptance as a major in the Africana Center, a student must maintain a C+ cumulative average in the center's courses while completing the major program. The Africana major must complete thirty-six credits in courses offered by the center, to include the following four core courses: 231, 290, 360, 431. Beyond the core courses, the student must take eight credits of center courses numbered 200 or above and fifteen credits numbered 300 or above. Within this selection the student must take at least one of the following AS&RC courses: 203, 204, 283, or 301. The program of an undergraduate major may have a specifically Afro-American focus or a specifically African focus.

Joint Majors

The center encourages joint majors in the College of Arts and Sciences and in other colleges. Joint majors are individualized programs that must be worked out between the departments concerned. The center's undergraduate faculty representative, Professor R. Harris, will assist students in the design and coordination of joint major programs. However, in any joint major program the center will require that at least sixteen credits be taken in AS&RC courses, including 290.

Double Majors

In the case of double majors (as distinct from joint majors) students undertake to carry the full load of stipulated requirements for a major in each of the two departments they have selected.

The Honors Program

The honors program offers students the opportunity to complete a library research thesis, a field project in conjunction with a report on the field experience, or a project/experiment designed by the student. The requirements for admission to the honors program for all students — regular majors, joint majors, and double majors — are a B− cumulative average in all courses and a B+ cumulative average in the center's courses. Each student accepted into the honors program will have an honors faculty committee, consisting of the student's adviser and one additional faculty member, which is responsible for final evaluation of the student's work. The honors committee must approve the thesis or project proposal before May 1 of the student's junior year. The completed thesis or project report should be filed with the student's faculty committee by May 10 of the senior year.

Distribution Requirement

The following AS&RC courses satisfy distribution requirements in the categories as listed. Social sciences: any two of 171, 172, 231, 290, 301, 302, 344, 345, 346, 351, 352, 410, 420, 460, 484, 485, 495, 550. History: any two of 203, 204, 231, 283, 344, 360, 361, 370, 381, 460, 475, 483, 490. Humanities: any two of 219, 422, 431, 432, 465, 492. Expressive arts: any two of 137, 138, 285, 303, 465.

Two Africana Studies and Research Center courses from the appropriate group may be used in fulfillment of one of the following distribution requirements: social sciences, history, humanities, or expressive arts. Students who are not Africana Studies and Research Center majors may petition to satisfy a second requirement with center courses if they are carrying a heavy program at the center.

Language Requirement

Swahili fulfills the College of Arts and Sciences language requirement. Successful completion of AS&RC 131, 132, 133, and 134 gives qualification in Swahili. Successful completion of AS&RC 202 gives proficiency in Swahili. Africana majors are not required to take Swahili, but the center recommends the study of Swahili to complete the language requirement.

Ancient Mediterranean Studies

Study of the major ancient cultures of the Mediterranean involves a large number of disciplines in several departments at Cornell. The concentration in Ancient Mediterranean Studies aims at providing a coordinated program for students who do not elect to major in this area. (Relevant majors are offered by the Department of Classics and the Department of Near Eastern Studies.) There are no prerequisites for the concentration, which is open to freshmen as well as upperclass students regardless of their majors. The concentration will serve one or both of two main purposes: (1) An introduction to the group of cultures that form the roots of modern Western culture. Mediterranean traditions of politics, religion, thought, literature, and art have continued and developed in new ways in the West since the end of antiquity. An understanding of those traditions as well as the issues and concerns from which they grew is valuable in itself and provides an illuminating perspective essential to understanding our own culture. (2) An introduction to the liberal arts through the study of works of the highest quality in literature, art, history, philosophy, government, and science.

Courses are offered under four classifications: general courses, civilization (history, art, and archaeology), literature, and thought. General courses are intended to be introductory to all three areas of civilization, literature, and thought. To fulfill the requirements of the concentration the student must complete a minimum of five courses selected in consultation with an adviser in the concentration.

Types of Programs

A student may wish to concentrate entirely in one of the three main areas (civilization, literature, or thought) or to elect a program which draws from two or all three of these areas, such as a study of the civilization, literature, and thought of one period — for example, Classical Greece (fifth and fourth centuries, B.C.). Many other coherent programs may be arranged by the student and adviser.

Biology and Society

S. M. Brown, Jr. chairman; R. Boyd, B. Edmonston, T. Eisner, J. Fessenden-Raden, D. Greenwood, J. Haas, S. Levin, W. Provine, R. Root, J. M. Stycos, B. Wallace, S. Zahler

The Biology and Society major within the College of Arts and Sciences is a multidisciplinary program for students with special interests in such problems as food and population, energy, the environment, conservation of our natural resources, genetic engineering, and the right to medical care, as well as for students who plan postgraduate study in health and medicine, law, or other related fields.

Because the Biology and Society major is multidisciplinary, students must attain a basic understanding of each of the several disciplines it comprises, including introductory courses in the fields of chemistry, mathematics, genetics, ecology, and history. In addition, majors are required to take the two-semester course in Biology and Society, a set of electives, and a special senior seminar. Programs incorporating these required courses are designed in consultation with a special group of faculty advisers to accommodate each student's individual goals and interests. For further information on the Biology and Society major, including courses of related interest, specific course requirements, and application procedures, contact Professor S. M. Brown, Jr., Program on Science, Technology, and Society, 628 Clark Hall.

China-Japan Program

T. L. Mei, director; J. McCoy, associate director; M. G. Bernal, K. Biggerstaff, N. C. Bodman, K. Brazell, S. Cochran, B. deBary, D. R. DeGlopper, R. T. Freeman, A. G. Grapard, E. M. Gunn, E. H. Jorden, D. P. Mozingo, T. J. Pempel, C. A. Peterson, H. Shadick, R. J. Smith, C. Steenstrup, M. W. Young

The China-Japan Program is made up of faculty members who have a commitment to teaching and research on China and Japan. The program is interdisciplinary and is organized to encourage and assist students in the study of the two great civilizations of East Asia. In addition to offering a substantial number of courses in the languages of China and Japan, program faculty members cover most of the major disciplines by means of courses given in several departments of the Arts College. The program is especially rich in courses that deal with the history, literatures, societies, culture, and arts of East Asia. Undergraduates wishing to concentrate their studies on China or Japan may do so by declaring a major in the Department of Asian Studies and selecting an adviser from the faculty members listed above. Students interested in majoring in Asian Studies with a focus on either China or Japan should consult the chairman of the Department of Asian Studies in 156 Rockefeller Hall. Graduate students interested in Chinese and Japanese studies should consult the *Announcement of the Graduate School*. For further information, contact the director or any staff member in the China-Japan Program Office, 140 Uris Hall.

College Scholar Program

The College Scholar Program is designed to serve those students whose interests and talents do not easily fit into the usual departmental majors, who demonstrate exceptional promise, and who show the maturity to plan and carry out, with the help of their adviser, a well-designed program of studies that does not necessarily follow the College requirements. College Scholars do not all design the same kind of program: some, for instance, may pursue two diverse interests, while others design a well integrated educational plan. Although they do not need to present a program that lists each course they plan to take, they are expected to have a firm sense of what they would like to accomplish at Cornell. The program allows them to explore the College's many offerings with a little more freedom than is available to other students.

Each year up to forty freshmen are chosen for the program. College Scholars must complete 120 credits of course work, a senior project, the physical education requirement, and, unless they receive permission to accelerate, eight terms in the college. They are not required to complete a major or fulfill the distribution requirement, but members of the College Scholar Advisory Board believe that the spirit of the requirements is a good one.

Applications to the College Scholar Program are due before the final class day of spring term. Interested students should contact the Office of Special Programs, 159 Goldwin Smith Hall, for further information.

The Honors Program

Candidates for honors must maintain a 3.5 average in all courses and must complete two College Scholar seminars. Nonscientists should complete one seminar in some aspect of science, and scientists at least one in the humanities or social sciences. During the senior year candidates for honors must complete a thesis or honors project. Students interested in the honors program should confer with the director of the College Scholar Program before the start of their senior year.

Independent Major Program

The Independent Major Program allows students to design their own majors if they wish to pursue an interest that cannot be met within an established major. Students who wish to study one fairly specialized field that cuts across several departments may plan an independent major with the help of a faculty adviser. Proposals for independent majors are assessed by a board of faculty members; board members consider whether the plan is equivalent in coherence, breadth, and depth to a departmental major and whether it is well-suited to the student's academic preparation and ability. Students should consult the director of the Independent Major Program, Office of Special Programs, 159 Goldwin Smith Hall, for further information. Deadlines for submitting independent major proposals are September 13, October 16, January 31, and March 12.

The Honors Program

Candidates for honors must have a cumulative average of 3.0, no grade below B in courses in the major, and a cumulative average of 3.5 for courses in the major. During their senior year candidates for honors must complete a thesis or honors program. Students interested in the program should confer with the director of the Independent Major Program before the start of the senior year.

Intensive English Program

E. J. Beukenkamp, director

This full-time, noncredit, nondegree program is designed to meet the requirements of foreign students who need to acquire proficiency in English in order to pursue university-level studies in the United States, as well as for visitors, businessmen, and others seeking competence in the language.

The intensive nature of the courses leads to a command of the language in all its aspects — listening, speaking, reading, and writing — in the shortest possible time.

Courses are offered both fall and spring semesters at three levels: beginning (TOEFL score below 370), intermediate (TOEFL score below 450), and advanced.

Students who have gained full admission to or who already are registered in degree granting programs at Cornell should consult *Cornell University: Description of Courses* for information regarding courses in English as a second language.

The Intensive English Program is administered by the Department of Modern Languages and Linguistics, Cornell University, Morrill Hall, Ithaca, New York 14853. Application materials and information are available directly from the program or by calling 607/256-4863.

Center for International Studies

The Center for International Studies supports and coordinates Cornell's programs of international and comparative studies. The center places particular emphasis on strengthening inquiry into issues that cut across disciplinary, professional, and regional concerns, and on providing a continuing source of innovation and experimentation in international studies. Further information about the center and its associated programs may be obtained from the Center for International Studies, Cornell University, 170 Uris Hall.

Program of Jewish Studies

J. Cohen, coordinator (Jewish History, The Church and the Jews, Rabbinics); M. F. Collins (Bible, Dead Sea Scrolls, Apocryphal and Rabbinic Literature); W. J. Dannhauser (Jews and Germans, Contemporary Jewish Thought, Gershom Scholem); S. L. Gilman (Yiddish Literature, German/Jewish History and Literature); A. G. Korman (Holocaust Studies, Jewish Labor Movements); D. I. Owen (Ancient Jewish History and Archaeology); E. Rosenberg (Modern European and Anglo-American Literature)

The Program of Jewish Studies is included in the framework of the Department of Near Eastern Studies. The program has grown out of the conviction that Judaic civilization merits its own comprehensive and thorough treatment and that proper understanding of any culture is inconceivable without adequate knowledge of the language, literature, and history of the people that created it. Accordingly, the offerings in the area of Hebrew language and literature have been considerably expanded and courses in ancient, medieval, and modern Jewish history have been added to the program.

Although further expansion of the program is anticipated, it presently enables students to obtain basic instruction and specialization in the fields of Semitic languages, the Hebrew Bible, the Apocryphal and Tannaitic literatures, medieval Hebrew literature, modern Jewish thought, modern Hebrew literature, and ancient, medieval, and modern Jewish history. In some of these fields students may take courses on graduate and undergraduate levels. Faculty in other departments provide additional breadth to the program by offering courses in related areas of study.

Latin American Studies

D. K. Freebairn, director; S. Barraclough, L. Crowder, T. Davis, R. Goldsen, W. Goldsmith, C. Greenhouse, J. Haas, D. Hazen, J. Henderson, T. Holloway, B. J. Isbell, J. Kahl, E. Kenworthy, L. King, T. Lynch, R. McDowell, C. Morris, J. Murra, T. Poleman, W. Rogers, B. Rosen, E. M. Santi, D. Solá, J. M. Stycos, M. Suñer, H. D. Thurston, A. Van Wambeke, W. Whyte, L. Williams, F. Young

The Latin American Studies Program encourages and coordinates faculty and student interests in Latin America. A variety of special lectures, films, and seminars supplement the regular course offerings. Undergraduate students may arrange a Latin American concentraton or an independent major in Latin American studies, and graduate students may pursue a minor in Latin American studies while majoring in the graduate field of their choice. The College of Arts and Sciences offers Latin American studies courses in anthropology, economics, government, history, and sociology. In addition, there is a varied language, literature, and linguistics curriculum in Spanish, Portuguese, and Quechua. The student may also pursue Latin American studies in the College of Agriculture and Life Sciences; the College of Architecture, Art, and Planning; the College of Human Ecology; and the School of Industrial and Labor Relations.

Law and Society

The existence at Cornell of a wide variety of courses concerning the law as a social and historical phenomenon makes it possible for students to study law and society as a minor field. Students who wish to graduate with a concentration in law and society should consult one of the advisers listed below to work out a coherent program of study including at least four courses from among those approved for this purpose.

The law and society advisers for the 1978–79 year are: H. Alker (psychology), C. Carmichael (comparative literature), E. Eisenach (government), C. Greenhouse (anthropology), C. Holmes (history), J. B. Jacobs (sociology), D. B. Lyons (philosophy), D. T. Regan (psychology)

The Frederick George Marcham Scholar Program

Each year the Frederick George Marcham Scholar Program supports a special seminar program. For information contact M. Kammen, A. D. White Center for the Humanities.

Center for Applied Mathematics

The Center for Applied Mathematics administers a broadly based interdepartmental graduate program that provides opportunities for study and research over a wide range of the mathematical sciences. This program is based on a solid foundation in analysis, algebra, and methods of applied mathematics. The remainder of the graduate student's program is designed by the student and his or her Special Committee. For more detailed information on opportunities for graduate study in applied mathematics contact the director of the Center for Applied Mathematics.

There is no special undergraduate degree program in applied mathematics. Undergraduate students interested in an application-oriented program in mathematics may select either the Option I or Option II major in mathematics or a suitably oriented program in some department of the College of Engineering.

Medieval Studies

A. B. Groos, graduate faculty representative; B. B. Adams, F. M. Ahl, A. J. Berger, V. T. Bjarnar, R. G. Calkins, J. Cohen, A. M. Colby-Hall, R. T. Farrell, C. Gilbert, T. D. Hill, J. J. John, R. E. Kaske, N. Kretzmann, G. Mazzotta, G. M. Messing, C. Morón-Arroyo, J. M. Najemy,

J. O'Donnell, D. M. Randel, B. Tierney, F. van Coetsem, W. Wetherbee III

Undergraduates interested in medieval studies have an opportunity to take courses in the following areas of instruction: medieval Hebrew, medieval Arabic, medieval Latin, Old English, Middle English, medieval Irish and Welsh, Old Provençal, medieval French, medieval Spanish, medieval Italian, Old Saxon, Old High German, Middle High German, Gothic, Old Norse (Old Icelandic), Old Russian, comparative literature, medieval art and architecture, medieval history, Latin paleography, medieval philosophy, musicology, comparative Slavic linguistics, comparative Romance linguistics, and comparative Germanic linguistics.

Undergraduates who wish to undertake an independent major or a concentration in medieval studies should consult the graduate faculty representative for medieval studies, Professor A. B. Groos, 180 Goldwin Smith Hall.

Information for prospective graduate students is contained in the *Announcement of the Graduate School* and in a brochure on medieval studies, which can be obtained from the graduate faculty representative.

Religious Studies

A. W. Wood, chairman; C. M. Arroyo, R. Baer, J. Bishop, J. Boon, R. Calkins, C. Carmichael, K. Clinton, M. Colacurcio, T. Frank, J. John, T. Kirsch, N. Kretzmann, S. O'Connor, J. O'Donnell, D. Owen, D. Randel, M. Schub, C. Strout, B. Tierney

Religious studies is an interdisciplinary program reflecting a wide variety of academic interests and disciplines. The intention of the program is to provide a formal structure for the study of the religions of mankind at the undergraduate level. A student may fulfill the requirement for a concentration in religious studies by completing a minimum of four courses that have been approved by an adviser in the area of concentration. The program is administered by a committee; the chairman is A. W. Wood, 327 Goldwin Smith Hall.

Courses in religious studies are offered in the following departments: Anthropology, Archaeology, Asian Studies, Classics, Comparative Literature, English, History, History of Art, Natural Resources, Near Eastern Studies, Philosophy, and Romance Studies.

Major in Russian and Soviet Studies

The College offers a major in Russian and Soviet studies, the requirements for which are:

1) Qualification in Russian.
2) At least one course relating to Russia, at the 200 level or above, in each of the following departments: government, economics, history, and Russian literature. (A course in another department may be substituted for one of the above with the consent of the major adviser.)
3) At least three additional courses, at the 300 level or above, in one of the following departments: government, economics, history or Russian literature. These courses shall be selected in consultation with the student's adviser and shall be approved as appropriate for a major in Russian and Soviet studies.

Each student majoring in Russian and Soviet studies will be assigned a major adviser in the department of his or her special interest who is also a specialist on Russia. Interested students should contact Professor W. Pintner, Department of History.

Program on Science, Technology and Society

The Program on Science, Technology, and Society (STS) is an interdisciplinary unit that promotes teaching and research on the interactions of science and technology with political and social institutions. The program draws its students, faculty, and research staff from departments in all colleges of the University. Topics of special concern include science, technology, and public policy; biology and society; technology assessment; citizen participation in technical decision-making; arms control and national defense policies; energy policy; environmental law and ethics; and biomedical ethics. These and other subjects are studied through courses, graduate and faculty seminars, workshops, and research projects.

In cooperation with University academic departments and centers, the STS Program participates in the development of interdisciplinary courses at both the graduate and undergraduate levels. Courses developed by the program are designed to both synthesize and contrast the perspectives of several academic disciplines in the analysis of relationships among science, technology, and the needs, values, and institutions of modern societies.

Further information may be obtained by contacting the Program on Science, Technology, and Society, Cornell University, 628 Clark Hall.

Social Relations Major

The major in social relations is offered jointly by the Department of Anthropology and the Department of Sociology. It provides the student with basic competence in cultural anthropology, social psychology, and sociology, and gives particular emphasis to the common methods of research in these disciplines. The student is expected to obtain a grasp of the common interests and unique insights of the three disciplines, and in the senior Social Relations Seminar is expected to integrate aspects of their theory and data. Students seeking admission to the program in social relations should apply to the Social Relations Committee, 323 Uris Hall.

Society for the Humanities (A. D. White Center for the Humanities)

Michael Kammen, director. Fellows for 1978–79: P. Henry Blyth (St. Mary's College, London); James A. Boon (Cornell University); Philip Grierson (Gonville and Caius College, Cambridge University); Andrew Harvey (All Souls College, Oxford University); Victor B. Lieberman (Hatfield Polytechnic, Hertfordshire, England); Garrett Olmsted (Harvard University); Richard Sorabji (King's College, London); Edith Sylla (North Carolina State University); William D. Vanech (Brown University); Winthrop Wetherbee (Cornell University)

The center awards annual fellowships for research in the humanities in three categories: senior fellowships, faculty fellowships, and junior postdoctoral fellowships.The fellows offer, in line with their research, informal seminars intended to be exploratory or interdisciplinary.

Unlike other courses, the center's seminars begin the *second* week of each semester. These seminars are open to graduate students and suitably-qualified undergraduates. Students wishing to attend should telephone the center (256-4725) early in the first week of

the term to arrange a short interview with the fellow offering the course. There are no examinations, and it is at the discretion of the fellow whether to require only oral reports, or, in addition, a research paper. Students wishing credit for the course should formally register in their own college. Persons other than those officially enrolled may attend as visitors with permission of the fellow.

All seminars are held in the A. D. White Center for the Humanities, 27 East Avenue.

Undergraduate Research Program

The Undergraduate Research Program enables students to participate in research projects of faculty members and to earn credit for their work. Projects in the humanities, the social sciences, and the natural sciences are available. Students and the faculty members with whom they work agree on how much and what kind of work the student will be expected to do, and how much credit will be awarded. A limited amount of funding is available to help defray costs of equipment and computer time. The Office of Special Programs, 159 Goldwin Smith Hall, has descriptions of current projects.

Women's Studies Program

E. Adkins, S. Bem, K. Brazell, P. Carden, J. Egner, L. Engelstein, J. Farley, H. Feldman, J. Gerner, E. Goldsmith, M. Katzenstein, S. McConnell-Ginet, L. Paltrow, B. Richardson, C. Straughan, P. Vogel, L. Waugh. Lecturers, fall 1978: B. Buettner, R. Possen, P. Vogel; spring 1979: K. Beckwith, J. Bowers, E. Goldsmith, M. Jebb, R. Levin, J. Ormondroyd, L. Purdy, J. Winterkorn

Women's Studies, a University program in the College of Arts and Sciences, has three goals: to encourage the development of teaching about women for women and men; to examine assumptions about women in various disciplines and to develop, systematize, and integrate back into the disciplines new knowledge about women; and to cooperate in public service activities with the extension divisions of the University. Each term, the program offers undergraduate and graduate courses, both independently and in cooperation with other departments. Students in the College of Arts and Sciences wishing to major in women's studies can design their own major through the Independent Major Program.

Any graduate student in the University may elect a women's studies minor. The program sponsors a biweekly noncredit seminar for graduate students and faculty to facilitate sharing of knowledge across disciplinary lines.

The program is guided by a board composed of professors from three of the fourteen divisions at Cornell, Women's Studies Program lecturers, and elected representatives of the undergraduate and graduate students. The program serves as a clearinghouse for information about women's organizations on campus. Each Friday noon during the academic year, Women's Studies sponsors informal presentations, open to the public, about current research or a social issue affecting women.

Distribution Requirement

The following women's studies courses satisfy the distribution requirement in the social sciences: Women's Studies 101 and any one of the following: 244, 321, 366, 373, 422, 464, 466, 697.

Division of Biological Sciences

The Division of Biological Sciences is organized to provide a unified curriculum for undergraduate majors enrolled in either the College of Agriculture and Life Sciences or the College of Arts and Sciences. Courses in biological sciences are also an integral part of many disciplines today and a basic requirement for areas of study in many schools and colleges of Cornell.

A brochure describing the biological sciences specialization in more detail is available from the admissions offices of the College of Agriculture and Life Sciences and the College of Arts and Sciences.

Graduate study in the biological sciences is administered by more than a dozen specialized fields within the Graduate School. More detailed information about graduate study is contained in the *Announcement of the Graduate School*.

Facilities

The offices, research laboratories, and teaching rooms of biology faculty members are located in many different buildings both on and off the campus but primarily in the Colleges of Arts and Sciences and Agriculture and Life Sciences, and the New York State College of Veterinary Medicine.

With laboratories and faculty offices spread over a large area, the need to centralize the services and resources for biology students led to the establishment of the Behrman Biology Center in Stimson Hall. The "Bio Center" is an informal meeting place for students to talk to biology faculty and serves as headquarters for the academic advising and counseling program. Services and resources include tutoring, tape recordings of lectures, reading materials, and detailed course information.

Faculty

H. T. Stinson, director; S. A. Zahler, associate director for academic affairs; E. K. Adkins, K. Adler, M. Alexander, J. M. Anderson, J. P. Barlow, D. M. Bates, A. Bensadoun, A. W. Blackler, S. E. Bloom, E. B. Brothers, W. L. Brown, P. J. Bruns, P. F. Brussard, R. E. Buskirk, T. J. Cade, J. M. Calvo, J. M. Camhi, N. A. Campbell, R. B. Campenot, R. R. Capranica, A. P. Casarett, B. F. Chabot, R. S. Chaleff, J. L. Cisne, R. K. Clayton, P. J. Davies, E. A. Delwiche, W. C. Dilger, W. L. Dills, W. J. Dress, S. J. Edelstein, T. Eisner, S. T. Emlen, H. E. Evans, H. L. Everett, P. P. Feeny, G. W. Feigenson, J. M. Fessenden-Raden, G. R. Fink, R. H. Foote, E. L. Gasteiger, J. Gibson, Q. H. Gibson, J. H. Gillespie, C. A. S. Hall, R. L. Hallberg, B. P. Halpern, G. G. Hammes, W. Hansel, G. Hausfater, L. A. Heppel, G. P. Hess, P. C. Hinkle, K. A. Houpt, T. R. Houpt, H. C. Howland, R. R. Hoy, J. W. Ingram, A. T. Jagendorf, W. T. Keeton, E. B. Keller, K. A. R. Kennedy, J. M. Kingsbury, F. W. Lengemann, S. A. Levin, G. E. Likens, J. T. Lis, E. R. Loew, R. E. MacDonald, R. J. MacIntyre, J. T. Madison, P. L. Marks, R. E. McCarty, D. B. McCormick, W. N. McFarland, K. Moffat, H. E. Moore, K. J. Niklas, J. D. Novak, D. J. Paolillo, M. V. Parthasarathy, D. Pimentel, T. R. Podleski, F. H. Pough, W. B. Provine, E. Racker, M. E. Richmond, J. W. Roberts, R. B. Root, M. M. Salpeter, H. W. Seeley, R. M. Spanswick, A. M. Srb, D. N. Tapper, J. F. Thompson, B. K. Tye, C. H. Uhl, V. Utermohlen, P. J. VanDemark, A. van Tienhoven, V. M. Vogt, B. Wallace,

R. H. Wasserman, M. D. Whalen, J. H. Whitlock, R. H. Whittaker, D. B. Wilson, W. A. Wimsatt, R. J. Wu, D. B. Zilversmit

Other Teaching Personnel

P. G. Aitken, R. R. Alexander, R. A. Calvo, R. A. Corradino, P. R. Ecklund, M. Ferger, J. C. Glase, J. B. Heiser, D. A. Kirchhof-Glazier, T. J. McDonald, C. H. McFadden, B. McNab, C. Reiss, M. L. Wilkinson, N. B. Wurster, M. C. Zimmerman

Distribution Requirement

In the College of Agriculture and Life Sciences, the biological sciences distribution requirement is a minimum of nine credits, including at least six credits of introductory biology selected from either Bio S 109–110, or 105–106, or 101–102 and 103–104, or 101–102 and 103–208. Advanced placement in biology with a score of 4 or 5 (six or eight credits, respectively) will satisfy the requirement for introductory biology. The additional credits may be satisfied by any biological sciences courses except Bio S 108, 201, 202, 205, 206, 301 (401), or 302 (402); or by certain other nonbiological sciences courses specified by the College.

In the College of Arts and Sciences, the biological sciences distribution requirement is at least six credits of introductory biology selected from either Bio S 109–110, or 105–106, or 101–102 and 103–104, or 101–102 and 103–208. Advanced placement in biology with a score of 4 or 5 (six or eight credits, respectively) also satisfies the distribution requirement in the biological sciences.

In the College of Human Ecology, the natural sciences distribution requirement is at least six credits selected from Bio S 109–110, 101–103, 102–104 or 102–208, 105–106, or any courses in chemistry or physics. Advanced placement in biology with a score of 4 or 5 (six or eight credits, respectively) also satisfies the distribution requirement in the natural sciences.

The Major

The Division of Biological Sciences offers a major in biological sciences to students enrolled in either the College of Agriculture and Life Sciences or the College of Arts and Sciences. Prior to course registration for the junior year, all students wishing to be admitted to the major should schedule an appointment with the associate director for academic affairs in Stimson 118. Freshmen and sophomores in the process of completing the required prerequisites may be admitted to the major on a provisional basis. Since modern biology has an increasing physical and quantitative orientation, students are advised to undertake basic science courses that stress this orientation; these courses are signified by the use of "(recommended)" in the listing of requirements below. A 2.75 Cornell cumulative grade point average is required for final admission to the major except for those students admitted directly to the major as freshmen (Agriculture and Life Sciences students only) or as transfers; in addition, satisfactory performance is required in the completion of the following:

1) One year of introductory biology for majors (Bio S 101–102 and 103–104, or 101–102 and 103–208, or 105–106). Advanced placement may be allowed at the student's choice on receipt of a score of 5 on the advanced placement examination of the College Entrance Examination Board. Students with a score of 4 must fulfill the introductory biology requirement by taking Bio S 103–104 or 103–208, or four credits of work in Bio S 105–106 selected with the advice and approval of the instructors. Freshmen who have not taken the CEEB examination may register for a biology advanced standing examination adminstered during Orientation Week.
2) One year of general chemistry (Chem 207–208 or 215–216 recommended).
3) One year of college mathematics, including at least one semester of calculus (Math 111–112 [recommended] or 105–106).
4) One semester of organic chemistry lectures (Chem 253 or 357).

Whenever possible, students should include the first three subjects in their freshman schedule and complete the organic chemistry lecture course (see below) in their sophomore year. A student is not encouraged to undertake a major in biological sciences unless performance in the above four subjects gives evidence of capacity to do superior work at a more advanced level.

In addition to the introductory courses in biology, chemistry, and mathematics, each student majoring in biological sciences must complete the following:

1) Organic Chemistry 253 and 251, or 253 and 301, or 357–358 and 251, or 357–358 and 301.
2) Physics 207–208 (recommended), or 112–213–214, or 101–102.
3) Genetics (Bio S 281).
4) Biochemistry (Bio S 330 or 331).
5) One of the concentration areas outlined below.
6) The breadth requirement outlined below.
7) As an alternative to 5 and 6 above, the Program in General Biology.
8) Qualification in a foreign language. Students may satisfy this requirement by (a) having studied a foreign language for three or more years in high school, or (b) attaining a score of 560 or more on the reading portion of the College Entrance Examination Board (CEEB) achievement test, or (c) successfully completing six college credits in a foreign language.

Concentration Areas and Requirements

Students accepted into the biological sciences major must choose a concentration area or the Program in General Biology. The concentration requirements are designed to help students achieve depth in one area of biology while ensuring that the selection of advanced courses will form a coherent and meaningful unit. Due to the flexibility allowed in satisfying these requirements, students should consult their faculty advisers. No more than four credits of research courses may be used in completion of the requirements in the area of concentration. Special programs for students interested in biophysics, microbiology, or nutrition are available to students who qualify for them. The possible concentration areas are:

1) *Animal Physiology and Anatomy:* The Vertebrates (Bio S 274), an introductory animal physiology course (Bio S 311 and 319 or Bio S 416 and 418), and at least four

additional credits selected from the following courses: Invertebrate Zoology (Bio S 310); Histology: The Biology of the Tissues (Bio S 313); Ecological Animal Physiology (Bio S 315 and 317); Vertebrate Developmental Anatomy (Bio S 389); Vertebrate Morphology (Bio S 414); Survey of Cell Biology (Bio S 432); Mammalian Physiology (Bio S 654, 655, 656) with special permission; Fundamentals of Endocrinology (An S 427). Students electing to take one of the three-credit courses (Bio S 315, 389, 414, 432, 654, 655, or 656) may complete the four credits by taking the Seminar in Anatomy and Physiology (Bio S 410).

2) *Neurobiology and Behavior:* The introductory course in Neurobiology and Behavior (Bio S 321), and twelve additional credits, including a second course from the neurobiology and behavior offerings. The remainder of the twelve credits may be in any course (e.g., physiology, developmental biology, cellular biology, ecology, vertebrate or invertebrate biology, etc.) approved by the adviser as appropriate preparation for work or advanced study in neurobiology and behavior or in related subjects.

3) *Biochemistry:* Quantitative Chemistry (Chem 300 or Chem 215–216) must be taken. One of the following organic chemistry laboratory sequences must also be taken: Chem 301–302, or Chem 251–252–302, or Chem 301, or Chem 251–252. In addition, the student must take a physical chemistry sequence (Chem 389–390 or Chem 287–288) and a biochemistry laboratory course (Bio S 638, or Bio S 430, or Bio S 434). It is recommended that students take the more rigorous organic chemistry and physics sequences (Chem 357–358 and Phys 207–208), and a third semester of calculus.

4) *Botany:* Five courses (including a plant physiology laboratory course) fulfill the concentration requirement, as follows: (a) Plant Physiology (Bio S 242 and 244 or Bio S 341 and 349); (b) Taxonomy of Vascular Plants (Bio S 346); (c) either Plant Anatomy or Cytology (Bio S 345 or 347); and (d) either Plant Biology (Bio S 241), Phycology (Bio S 348), Comparative and Developmental Morphology of the Embryophyta (Bio S 444), Plant Ecology (Bio S 463 and 465), or Introductory Mycology (Pl Pa 309). A student may elect to complete the required five courses by taking both courses in group c rather than taking any in group d.

5) *Ecology, Systematics, and Evolution:* General Ecology (Bio S 360), Organic Evolution (Bio S 477), a plant or animal physiology course, and at least one 400-level course with accompanying laboratory from within the concentration offerings. In addition to the latter course, students in this area must select at least two laboratory courses above and beyond those required of all biology majors (i.e., introductory biology, genetics, and organic chemistry). These two laboratory courses may include the physiology course, and/or courses counted toward fulfillment of the breadth requirement. It is strongly recommended that students planning graduate study take a course in statistics (ILR 210 or 311).

6) *Genetics and Development:* Nine credits, usually selected from the following courses: Human Genetics (Bio S 282); Cytology (Bio S 347); Developmental Biology (Bio S 385); Vertebrate Developmental Anatomy (Bio S 389); Cytogenetics (Bio S 446); Organic Evolution (Bio S 477); Population Genetics (Bio S 481); Plant Cell Genetics (Bio S 482); Molecular Aspects of Development (Bio S 483); Molecular Evolution (Bio S 484); Microbial Genetics (Bio S 485 and 487); Genetics of Lower Eucaryotes (Bio S 488); Undergraduate Research in Genetics and Development (Bio S 489); Plant Growth and Development (Bio S 644); Animal Cytogenetics (An S 419); Physiological Genetics of Crop Plants (Pl Br 605).

7) *Cell Biology:* Quantitative Chemistry (Chem 300 or Chem 215–216), a laboratory (Bio S 434 or Bio S 430), and one of the following two options:

   Option 1: Survey of Cell Biology (Bio S 432) and eight additional credits selected from Groups A and B.

   Option 2: Two courses selected from Group A and six additional credits selected from Groups A and B.

   Group A: Cell Sructure and Physiology (Bio S 433); Cellular Growth Control and Oncogenic Viruses (Bio S 438); Molecular Aspects of Development (Bio S 483).

   Group B: Basic Immunology, Lectures (Bio S 305); Basic Immunology, Laboratory (Bio S 307); Histology: The Biology of the Tissues (Bio S 313); Plant Anatomy (Bio S 345); Cytology (Bio S 347); Plant Cell Genetics (Bio S 482); Microbial Genetics, Lectures (Bio S 485); Genetics of Lower Eucaryotes (Bio S 488); Cellular Neurobiology (Bio S 496); Animal Cytogenetics (An S 419); General Microbiology Lectures (Micro 290); General Microbiology Laboratory (Micro 291).

   Students anticipating graduate work in cell biology should consider taking a physical chemistry sequence (Chem 389–390 or Chem 287–288).

8) Students who, for good reason, wish to undertake a course of study not covered by the seven existing concentration areas or the Program in General Biology may petition the Division of Biological Sciences Curriculum Committee.

Breadth Requirement

To fulfill the breadth requirement in the biological sciences major, students must pass a total of two courses outside of their concentration area and selected from two of the categories listed below. Faculty advisers should be consulted when choosing the courses to meet this requirement.

1) *Animal Physiology and Anatomy:* Bio S 274, 310, 311 (314), 313, 315, 389, 416.

2) *Botany:* Bio S 242 and 244, 341 and 349, 345, 346, 348; Pl Pa 309.

3) *Cellular and Developmental Biology:* Bio S 305, 347, 385, 432, 483; Micro 290.

4) *Ecology, Systematics, and Evolution:* Bio S 260, 360, 471*, 472*, 475*, 476*, 477; Entom 212.

5) *Neurobiology and Behavior:* Bio S 321.

Program in General Biology

Students choosing the general biology option must fulfill all the general requirements for the biology major (chemistry,

*May not be used as a breadth course if Bio S 274 is counted as a breadth course.

genetics, biochemistry, etc.) *except* one of the concentration areas and the breadth requirement. The specific requirements for the program are:

1) General Ecology (Bio S 360)
2) Neurobiology and Behavior (Bio S 321)
3) A physiology course from the following: Plant Physiology (Bio S 241 and 244 or Bio S 341 and 349); Introductory Animal Physiology, Lectures (Bio S 311); Ecological Animal Physiology, Lectures (Bio S 315); General Animal Physiology: A Quantitative Approach, Lectures (Bio S 416).
4) One course from the following: Plant Biology (Bio S 241); The Vertebrates (Bio S 274); Invertebrate Zoology (Bio S 310); Taxonomy of Vascular Plants (Bio S 346); Phycology (Bio S 348); Insect Biology (Entom 212); General Microbiology (Micro 290 and 291).
5) At least one course concentrating on plants. This may be satisfied by a course from 3 or 4.
6) At least one course with a laboratory. This may be satisfied by a course from 3 or 4 or 5.
7) A biological sciences course having as a prerequisite one of the following: Plant Physiology (Bio S 242 or 341); Plant Biology (Bio S 241); The Vertebrates (Bio S 274); Genetics (Bio S 281); Introductory Animal Physiology, Lectures (Bio S 311); Ecological Animal Physiology, Lectures (Bio S 315); Neurobiology and Behavior (Bio S 321); Principles of Biochemistry (Bio S 330 or 331); General Ecology (Bio S 360); General Animal Physiology: A Quantitative Approach, Lectures (Bio S 416).

Independent Research and Honors Program

Individual research projects under the direction of a faculty member are encouraged as part of the program of study within a concentration. Applicants for research projects are accepted by the individual faculty members, who take into account students' previous academic accomplishments, interests, and goals, and the availability of space and equipment suitable for the proposed project. Students accepted for independent research will enroll for credit in a research course with the written permission of the faculty supervisor. No more than four credits of research courses may be used in completion of the requirements in the area of concentration.

The honors program in biological sciences is designed to offer advanced training in laboratory or field research through the performance of an original research project under the direct guidance of a member of the faculty. Applications for the honors program are available in the Office for Academic Affairs (Stimson 118), and must be submitted to the Honors Program Committee by the first week of classes of the senior year. To qualify for the program, students enrolled in the College of Agriculture and Life Sciences must have at least a 3.0 cumulative grade average; those in the College of Arts and Sciences must have at least a 2.7 cumulative grade average. All students must have at least a 3.0 cumulative grade average in biology, chemistry, and mathematics, and should have completed at least thirty credits at Cornell. In addition, candidates must have a faculty member to supervise their research. Any faculty member in the Division of Biological Sciences may act as a supervisor.

Faculty supervisors outside the division are acceptable only if a faculty member of the division agrees to take full responsibility for the quality of the work. In rare cases, research done elsewhere may be presented for honors, providing that prior approval of the Honors Program Committee has been given. An honors candidate usually enrolls for credit in a research course under the direction of the faculty member acting as honors supervisor. Participation in an honors research seminar is expected.

Recommendation to the faculty that a candidate graduate with honors will be the responsibility of the Honors Program Committee. Students interested in the honors program should consult with their faculty adviser early during their junior year. Students are encouraged to begin their research projects in the junior year. Details pertaining to thesis due dates, seminars, and other requirements may be obtained from the chairperson of the Honors Program Committee. Information on faculty research activities is available in the Behrman Biology Center (Stimson G-20).

Curriculum Committee

Many decisions pertaining to the curriculum, to division-wide requirements, and to concentration and breadth areas are made by the Curriclum Committee of the division. The committee has faculty and elected student members, and welcomes advice and suggestions from all interested persons.

Advising

Students in need of academic advising or counseling are encouraged to consult their advisers, come to the Behrman Biology Center (Stimson G-20), or contact the associate director for academic affairs (Stimson 118).

Graduate School of Business and Public Administration

Administration

H. Justin Davidson, Dean

David A. Thomas, Associate Dean

Edward T. Lewis, Associate Dean for External Affairs

Jan K. Orloff, Assistant Administrator, Public Administration Program

George A. Ridenour, Director of Admissions and Student Affairs

Jeanette P. Shady, Director of Placement

Karen A. Tosi, Assistant Director of Placement, Sloan Program and Assistant to the Dean

Malka Weinstein, Registrar and Assistant Director of Admissions and Student Affairs

The Graduate School of Business and Public Administration prepares men and women for managerial careers in private business, public service, and health-care. The School offers course work in many disciplines to provide potential business, public, and health managers with an understanding of the complexities of the external environment in which they will operate and of the internal workings of the organizations of which they will become a part.

In most cases, a bachelor's degree or its equivalent is required for admission to the two-year program leading to the Master of Business Administration (M.B.A.), Master of

Professional Studies (Hospital and Health Services Administration) — M.P.S. (H.H.S.A.) — degree. Over half of the students have a background of undergraduate studies in arts and sciences and about one-quarter in engineering. One-half of the students begin their graduate training immediately after receiving their bachelor's degrees and the remaining half following military or work experience.

There are combined degree programs for highly qualified students in the undergraduate divisions, which allow them to register in the B&PA School during their senior year, earning a master's degree in less than the usual time.

The Doctor of Philosophy program, administered through the Graduate School, provides an advanced and comprehensive education in administration, primarily for those who seek careers in teaching and research.

More detailed information about these programs is available in the *Announcement of the Graduate School of Business and Public Administration*, obtainable from the Director of Admissions and Student Affairs, Graduate School of Business and Public Administration, Malott Hall.

College of Engineering

Administration

Andrew Schultz, Jr., Acting Dean
Malcolm S. Burton, Associate Dean
Richard H. Lance, Associate Dean
Paul R. McIsaac, Associate Dean
John F. McManus, Associate Dean
Ron W. Simmons, Assistant Dean
David C. Johnson, Assistant Dean and Director of Admissions and Student Personnel
Arthur A. McCombs, Assistant Director of Admissions
Mariea T. Blackburn, Assistant Director of Admissions
Robert E. Gardner, Director of Advising and Counseling
Franklin H. Ahimaz, Director of Division of Basic Studies
Donald F. Berth, Director of Engineering Projects
Jane H. Pirko, Registrar

Facilities

Most of the academic units of the College of Engineering are centered in the ten modern buildings located on the Engineering Quadrangle. Facilities for applied and engineering physics are located in Clark Hall on the College of Arts and Sciences campus.

Other Facilities Used in Engineering

Cornell Computing Facility. Principally an IBM 370/168 system, including a central facility, five satellite stations, and teletypewriter terminals.

Cornell High Energy Synchrotron Source. A synchrotron radiation laboratory operated in conjunction with the University's high-energy storage ring.

Laboratory of Plasma Studies. A center for interdisciplinary research in plasma physics and lasers.

Materials Science Center. Provides highly sophisticated equipment for interdisciplinary research.

National Astronomy and Ionosphere Center (Arecibo). The world's largest radio-radar telescope facility, operated by Cornell University in Arecibo, Puerto Rico.

National Research and Resource Facility for Submicron Structures. A new interdisciplinary facility centered in the School of Electrical Engineering.

Bachelor of Science Degree

Undergraduate degrees are offered in the following areas:

	Degree Type	*HEGIS Code*
Agricultural Engineering*	B.S.	0903
Chemical Engineering	B.S.	0906
Civil and Environmental Engineering	B.S.	0908
College Program	B.S.	0901
Electrical Engineering	B.S.	0909
Engineering Physics	B.S.	0919
Geological Sciences	B.S.	1914
Materials Science and Engineering	B.S.	0915
Mechanical Engineering	B.S.	0910
Operations Research and Industrial Engineering	B.S.	0913

Undergraduate engineering curricula all begin with a basic two-year program administered by the Division of Basic Studies of the College of Engineering (an exception is the program in agricultural engineering, discussed below). This provides a foundation in mathematics, science, and engineering fundamentals in addition to elective course work in engineering core sciences, liberal studies, and natural or social sciences. Specialization begins in the junior year with one of nine field programs or an individually arranged curriculum under the College Program.

The general requirement for the B.S. degree is forty courses (a minimum of 127 credits), normally taken in four years of study. The distribution of courses during the freshman and sophomore years is described in the section on Division of Basic Studies. Upperclass programs include the following course requirements:

	Minimum credits
Twelve field-designated courses (or the equivalent in the College Program).	36
Four liberal studies electives, two of which must be at an upper-division level (300- or 400-level courses)	12
Two free elective courses	6
Two technical elective courses	6

Field Programs

In the junior year most students enter field programs, which are offered in the areas listed above. These programs are described under the appropriate academic areas (for engineering physics, see the section on applied and engineering physics). An exception is the College Program, comprising individually arranged curricula, which is described below.

Students interested in bioengineering may arrange suitable curricula within most of the field programs, or may take individually planned curricula under the College Program. Before preregistering for the sophomore year,

*To major in agricultural engineering, students enroll in the College of Agriculture and Life Sciences for the first three years and in the College of Engineering for the fourth year.

bioengineering students should obtain from the Engineering Advising and Counseling Center a copy of *Bioengineering at Cornell*, which provides the information necessary for planning a suitable curriculum.

College Program

Individually arranged courses of study under the College Program are possible for those whose educational objectives cannot be met by one of the regular field programs. Often the desired curriculum is in an interdisciplinary area. Each program is developed by the student in consultation with faculty advisers and must be approved by the College Program Committee, which is responsible for supervising the student's work.

Students apply to enter the College Program early in the second term of the sophomore year. A student may receive assistance in developing a coherent program from professors in the proposed major and minor subject areas who may be recommended by the College Program Committee or suggested by the student. If approved, the program is the curricular contract to which the student must adhere.

Every curriculum in the College Program, with the exception of certain faculty-sponsored programs, must comprise an engineering major and a minor. The major may be in any subject area offered by schools or departments of the College; the minor may be in a second engineering subject area or in a logically connected nonengineering area. The combinations must clearly form, in scope and in substance, an engineering education, and should include engineering design and synthesis as well as engineering sciences. In addition to fourteen courses in the major and minor subjects, including at least seven engineering courses, each program includes four liberal electives and two free electives.

A number of curricula in the College Program have been developed and are sponsored by groups of faculty members; these are described below.

Computer Science. Students wishing to concentrate in computer science develop a college program major in consultation with a faculty member of the Department of Computer Science. A minimum grade-point average of 2.5 is required. This major must be combined with a suitable supporting minor.

Energy Conversion. The College Program in Energy Conversion combines elements of three conventional disciplines — nuclear, thermal, and electrical engineering — in a broadly based curriculum aimed at meeting the accelerating energy needs of society.

Engineering Science. The College Program in Engineering Science, sponsored by faculty members of the Department of Theoretical and Applied Mechanics, requires additional mathematics, physics, mechanics, and engineering analysis courses beyond those in the underclass program.

Environmental and Public Systems. Systems analysis is widely used in the planning and management of environmental-quality and public systems, and students can specialize in this area with a sponsored college program. These students will generally concentrate in *water resources, ecosystems management, transportation,* or other studies of public systems.

Regional Science. This interdisciplinary course of study embraces economics, statistics, planning, and engineering in the planning of engineering works and the assessment of environmental impacts.

Survey Engineering. The College Program in Survey Engineering is sponsored by faculty members of the School of Civil and Environmental Engineering and of the Department of Agricultural Engineering. It is designed to develop competence in modern sensing and measurement principles and techniques that are appropriate for determining the geometrical characteristics of physical features on, in, or near the earth. The extent to which this program meets the professional licensing requirements of various states should be discussed with the sponsoring faculty members.

Further information about the College Program, including the special sponsored curricula, may be obtained from the College Program Office, 170 Olin Hall.

Dual Degree Option

A special academic option, intended for superior students, is the dual degree program in which both B.S. and A.B. degrees can be earned in five years. Students may register in either the College of Engineering or the College of Arts and Sciences as freshmen and begin the dual program in their second or third year. Those interested should contact Associate Dean M. S. Burton, 170 Olin Hall.

Master of Engineering Degrees

The one-year M.Eng. programs prepare students for professional employment or for more advanced graduate study in Ph.D. programs. The curricula for the eleven field-designated degrees are described in indicated sections under College of Engineering:

M.Eng. (Aerospace): Mechanical and Aerospace Engineering

M.Eng. (Agricultural): Agricultural Engineering

M.Eng. (Chemical): Chemical Engineering

M.Eng. (Civil): Civil and Environmental Engineering

M.Eng. (Electrical): Electrical Engineering

M.Eng. (Engineering Mechanics): Theoretical and Applied Mechanics

M.Eng. (Engineering Physics): Applied and Engineering Physics

M.Eng. (OR&IE): Operations Research and Industrial Engineering

M.Eng. (Materials): Materials Science and Engineering

M.Eng. (Mechanical): Mechanical and Aerospace Engineering

M.Eng. (Nuclear): Applied and Engineering Physics

The M.Eng. curricula are integrated with undergraduate field programs in the Cornell College of Engineering, but are open also to qualified graduates of other schools. Cornell baccalaureate engineering graduates will generally be admitted if they have cumulative grade-point averages of at least 2.5 and/or if they have demonstrated by their performances in their major fields that they have the ability to be successful in graduate study; a petition is required if the grade-point average is below 2.5. Other applicants must have a baccalaureate degree from an engineering program accredited by the Engineers Council for

Professional Development, or the equivalent, in an area of engineering or science that is judged appropriate for the proposed field of study. They must also present evidence of undergraduate preparation equivalent to that provided by a Cornell undergraduate engineering education: a transcript, two letters of recommendation, and a statement of academic purpose. A candidate who is admitted with an undergraduate background that is judged inadequate must make up the deficiencies in addition to fulfilling the regular course requirements for the degree.

Application forms and further information are available from the chairperson of the Graduate Professional Programs Committee, 319 Upson Hall.

Master of Science and Doctor of Philosophy Degrees

This research-oriented branch of graduate study in engineering and applied science at Cornell is organized under graduate fields, which generally coincide with the respective schools or departments of the College of Engineering. Prospective students should also consult the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Division of Basic Studies

F. J. Ahimaz, director; R. H. Lieberman

Students in the College of Engineering are enrolled for the first two years of their undergraduate education in the Division of Basic Studies.

The normal academic load is five courses each term. Many of these are elective, but the underclass program must satisfy certain requirements:

1) A sequence of four courses in mathematics and a three-term sequence in physics are required of all undergraduates. Freshmen enroll in chemistry during the first term and should elect a second term of chemistry if they plan a chemistry-related upperclass program.
2) A two-term sequence in basic engineering subjects, DBS 105 and 106, is required of freshmen. Students who intend to specialize in bioengineering or premedicine may substitute Bio S 102 plus 104 or Bio S 106 for DBS 106.
3) One natural science or social science course is required in each term of the freshman year. Students interested in bioengineering or premedicine should take biology and chemistry as freshmen. Students who elect to begin physics in term 1 may postpone the natural or social science elective to term 4.
4) During the sophomore year students take four engineering core science courses, selected in consultation with a faculty adviser.
5) All engineering students are required to complete eight liberal studies courses (twenty-four credits) before graduation. Freshmen must select their liberal electives from the Freshman Seminar courses. Two liberal studies electives are normally completed during the sophomore year. However, students whose career goals require them to do so, may substitute introductory courses in the natural sciences (e.g., biology or organic chemistry) for their liberal studies electives during the sophomore year, and defer these electives until the junior and senior years. The liberal studies electives may include courses in the humanities, social sciences, modern foreign languages, and expressive arts. At least two of the liberal studies elective courses (six credits minimum) must be at the upperclass level (300- or 400-level courses).
6) All undergraduate students who matriculated prior to the 1978 fall term are required by the University to complete four terms of physical education. For those who matriculated in the fall of 1978 or later, the requirement is to complete two terms of physical education.

Freshman and Sophomore Curricula

Typical programs for the freshman and sophomore years are given as examples. It should be noted that there are many variations, depending on students' individual backgrounds and educational and career plans.

Term 1	*Credits*
Math 191 or 193, Calculus for Engineers	4
Chem 207, General Chemistry	4
Freshman engineering course, DBS 105 or 106	3
Natural or social science elective	3
Freshman Seminar	3
Term 2	
Math 192 or 194, Calculus for Engineers	4
Phys 112, Physics I	4
Freshmen engineering course, DBS 105 or 106	3
Natural or social science elective*	3
Freshman Seminar	3
Term 3	
Math 293, Engineering Mathematics	4
Phys 213, Physics II	4
Engineering core science elective	3
Engineering core science elective	3
Liberal studies elective	3
Term 4	
Math 294, Engineering Mathematics	3
Phys 214, Physics III	4
Engineering core science elective	3
Engineering core science elective	3
Liberal studies elective	3

Engineering Core Sciences

The four engineering core science courses required in the sophomore year are selected from the four groups listed in the *Description of Courses Announcement*.

An important consideration in the choice of these courses is that each upperclass field may specify a particular engineering core science as a prerequisite for enrollment in the junior year. The courses required for entry into the different field programs are:

*Students who wish to major in chemical engineering and students who are interested primarily in bioengineering-premedicine must take Chem 208 during the freshman year. Chemical engineering students will select a considerably different program in the sophomore year (see discussion under Engineering Core Sciences). Because many students receive advanced placement credit, there are numerous variations of this curriculum.

Applied and Engineering Physics: M&AE 221
Chemical Engineering: Chem E 110 or 111*
Civil and Environmental Engineering: T&AM 202
Electrical Engineering: Ele E 210
Geological Sciences: no requirement
Materials Science and Engineering: no requirement
Mechanical and Aerospace Engineering: T&AM 202
Operations Research and Industrial Engineering: OR&IE 260

Advanced Placement

A growing number of students entering the Cornell College of Engineering receive advanced placement credit toward their degrees as a result of having already completed some college-level work.

Students may qualify for advanced placement (AP) in one of three ways: 1) by receiving a sufficiently high score on an AP examination of the College Entrance Examination Board (CEEB); 2) by receiving a sufficiently high score on one or more of the placement examinations given by the University; 3) by transferring credit earned at another accredited college or university.

Academic credit achieved through advanced placement is intended to permit students to develop more intellectually challenging and stimulating programs of study. There are at least three ways in which freshman students can make use of their advanced placement credit.

1) AP credit can be used to fulfill basic requirements, thus permitting advanced study in the same subject area or enrollment in additional nontechnical elective courses.
2) AP credit can be used to reduce a student's first-semester program and thus facilitate an easier transition to the Cornell environment. (A minimum of 13 credits must be taken.)
3) In a few cases, students may receive enough AP credits to complete the B.S. degree requirements ahead of time.

Academic Standing

The requirements for good standing in the College vary slightly among the different divisions. Freshmen must have a grade point average of 1.7 or higher with no grades of failing, unsatisfactory, or incomplete. Sophomore requirements are the same, except that the grade must be at least 2.0. Upperclass requirements depend upon the field of registry, and normally require a grade point average from 1.8 to 2.0 or higher with additional requirements for satisfactory performance in certain required courses.

Each semester Dean's List Citations are presented to those engineering students with exemplary academic records. The criteria for this honor are prescribed by the dean of the College. In 1978, a term average of 3.25 or higher is required, with no grades of F, U, or INC and 12 credits or more of letter grades.

*Students intending to enter Chemical Engineering must also take Chem 287, 289, and Chem 288, 290 during the sophomore year. Only two of the Group IV courses may be counted toward the four engineering core sciences required of all sophomores. Students who take the three courses from Group IV during the sophomore year may be unable to complete the engineering core science requirements that year, and may defer the fourth engineering core science until the junior year.

Upperclass Fields of Study

Each upperclass program includes twelve field-designated courses, as well as technical, free, and liberal studies electives. Courses offered by the College of Engineering number at least six hundred.

Aerospace Engineering

See Mechanical and Aerospace Engineering

Agricultural Engineering

N. R. Scott, chairman; L. D. Albright, R. D. Black, J. R. Cooke, R. B. Furry, W. W. Gunkel, D. A. Haith, L. H. Irwin, W. J. Jewell, G. Levine, R. C. Loehr, H. A. Longhouse, R. T. Lorenzen, D. C. Ludington, W. F. Millier, G. E. Rehkugler, M. F. Walter

Bachelor of Science

Students who plan to enter the Field Program of Agricultural Engineering must apply for admission to the College of Agriculture and Life Sciences for the first three years of college work, and then transfer to the College of Engineering for the fourth year. The curriculum is summarized as follows:

Term 1	*Credits*
Math 191, Calculus for Engineers	4
Chem 103 or 207	3
Ag En 151, Introduction to Agricultural Engineering and Computing	3
Bio S 101 and 103 or 109	4
Liberal studies elective (Freshman Seminar)	3
Term 2	
Math 192, Calculus for Engineers	4
Phys 112, Physics I	4
Ag En 152, Engineering Graphics	3
Bio S 102 and 104 or 110	4
Liberal studies elective (Freshman Seminar)	3
Term 3	
Math 293, Engineering Mathematics	4
Phys 213, Physics II	4
Engineering core science*	3
Engineering core science*	3
Liberal studies elective	3
Term 4	
Math 294, Engineering Mathematics	4
Phys 214, Physics III	4
Engineering core science*	3
Engineering core science*	3
Liberal studies elective	3

*The engineering core science courses must include T&AM 202 Mechanics of Solids, T&AM 203 Dynamics, and M&AE 221 Thermodynamics.

In addition to these courses, all freshmen and sophomores must satisfy the University's requirement in physical education.

The curriculum for terms 5 through 8 must include:

1) Engineering: minimum of thirty credits
   a. Agricultural engineering: minimum of twelve credits at the 450 level or higher
   b. Engineering sciences
2) Biological sciences or agricultural electives: minimum of twelve credits

3) Liberal studies electives: minimum of twelve credits

4) Free electives: minimum of six credits

Master of Engineering (Agricultural)

The program for the M.Eng (Agricultural) degree is intended primarily for those students who plan to enter engineering practice rather than for those who expect to study for the doctorate. The curriculum is planned as an extension of the Cornell undergraduate program in agricultural engineering, but can accommodate graduates of other engineering programs. General admission and degree requirements are described in the introductory section under College of Engineering.

A candidate for the M.Eng (Agricultural) degree may choose to concentrate in one of the subareas of agricultural engineering or take a broad program without specialization. The subareas are: (a) power and machinery, (b) soils and water engineering, (c) agricultural structures and associated systems, (d) electric power and processing, (e) energy management, and (f) agricutural waste management. Engineering electives are chosen from among subject areas relevant to agricultural engineering, such as thermal engineering, mechanical design and analysis, theoretical and applied mechanics, structural engineering, hydraulics, environmental engineering, soil engineering, and waste management.

Master of Science and Doctor of Philosophy

Programs offered by the graduate Field of Agricultural Engineering are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science.*

Applied and Engineering Physics

T. A. Cool, acting director; P. L. Hartman, associate director; B. W. Batterman, R. A. Buhrman, K. B. Cady, D. D. Clark, R. K. Clayton, H. H. Fleischmann, V. O. Kostroun, J. A. Krumhansl, A. Kuckes, B. R. Kusse, A. Lewis, R. L. Liboff, R. V. Lovelace, M. S. Nelkin, T. N. Rhodin, M. M. Salpeter, B. M. Siegel, J. Silcox, R. N. Sudan, W. W. Webb, G. J. Wolga

Bachelor of Science

At the upperclass level students may enroll in the Field Program in Engineering Physics, which is designed to develop proficiency in physics and applied mathematics. Its distinguishing feature is a focus on fundamental knowledge that has broad applicability to engineering and to other sciences. The program allows students to choose areas of concentration within and outside of physics during the undergraduate years.

Most applied and engineering physics graduates go on to advanced study in a wide variety of fields, including astrophysics, atmospheric sciences, biophysics, energy conversion, environmental science, geophysics, materials science and engineering, nuclear engineering, nuclear physics, oceanography, plasma physics, quantum optics, and solid-state electronics. In addition to M.S. and Ph.D. programs in these areas, the possibilities include professional Master of Engineering programs in engineering physics, nuclear engineering, or aerospace engineering. Further study in other professional fields for which a background in applied science is less directly applicable is also a possibility. Baccalaureate graduates also go directly to industrial positions.

Underclass students who are planning to enter the Field Program in Engineering Physics are encouraged to register in honors sections of physics and mathematics during the first two years. Those who have advanced standing in mathematics when they matriculate in the College are advised of the possibility of taking Phys 112 in the fall term of the freshman year and Applied Math I in the spring term of the sophomore year. Of the core engineering sciences studied in the first two years, a course in thermodynamics (M&AE 221 or Chem 287) is required. The courses A&EP 217 Contemporary Topics in Applied Physics and A&EP 206 The Physics of Life are strongly recommended for the sophomore year, the latter particularly for students with an interest in biophysics-engineering.

The following curriculum, or its equivalent, constitutes the upperclass field program.

Term 5	*Credits*
A&EP 333, Mechanics of Particles and Solid Bodies	4
A&EP 355, Intermediate Electromagnetism	4
Applied Mathematics I*	4
Free elective	3 or 4
Liberal studies elective	3 or 4
Term 6	
A&EP 361, Introductory Quantum Mechanics	4
A&EP 356, Intermediate Electrodynamics	4
Applied Mathematics II*	4
Electronic Circuits†	3 or 4
Liberal studies elective	3 or 4
Term 7	
A&EP 423, Statistical Thermodynamics	4
Phys 410, Advanced Experimental Physics	4
Applied Mathematics III*	4
Technical elective	3 or 4
Liberal studies elective	3 or 4
Term 8	
A&EP 434, Continuum Physics	4
Applications of Quantum Mechanics‡	3 or 4
Free elective	3 or 4
Technical elective	3 or 4
Liberal studies elective	3 or 4

Considerable flexibility is possible in the scheduling of these courses. For example, Phys 410 may be taken in term 7 or in term 8. Quantum mechanics can be studied in term 6 as A&EP 361 or in term 7 as Phys 443. The course in applications of quantum mechanics can be taken whenever the appropriate prerequisite has been met. If scheduling conflicts arise, the school may allow substitutions of courses nearly equivalent to the listed required courses: Phys 325–326 and Ele E 303–304 are similar to A&EP 355–356; Phys 318 (offered in the spring) and T&AM 670 are similar to A&EP 333; and a number of advanced courses in fluid mechanics or elasticity are similar to A&EP 434.

*Applied Mathematics I and II may be either Math 421–422 or T&AM 610–611. Applied Mathematics III may be Math 423, T&AM 613–614, or another mathematics course such as Math 411, 427, or 371. Alternate courses will be considered upon petition.

†Electronic circuits may be A&EP 363 or an equivalent junior-level electronics course.

‡A choice of the following courses may be made: Phys 454, Introductory Solid-State Physics; Phys 444, Nuclear and High-Energy Particle Physics; A&EP 609, Low-Energy Nuclear Physics (fall); A&EP 401, Physics of Atomic and Molecular Processes (fall); Ele E 731, Quantum Electronics I (fall).

Free and technical electives need not be all formal course work; qualified students may undertake informal study under the direction of a member of the faculty. This may include research projects in areas in which faculty members are active. These areas include electron microscopy and diffraction, quantum electronics, solid-state and surface physics, atomic physics, geophysics, biophysics, nuclear structure physics, nuclear engineering, and plasma physics. While free electives may be selected (with the consent of the faculty adviser) from among almost all the courses offered at the University, the student is encouraged to select those that will provide further preparation in the area of technical interest. The minimum requirement is two courses or six hours of credit.

The engineering physics student is expected to pass every course for which he or she is registered, to earn a grade of C or better in specific required courses, and to attain each term an overall grade-point average of at least 2.3.

Areas of Concentration

An area of concentration in an interdisciplinary study, such as biophysics, geophysics, nuclear engineering, lasers and quantum electronics, or plasma physics and materials science, may be arranged through a judicious choice of electives in the freshman and sophomore as well as the upperclass years. Examples of many such programs are described in a special brochure available from the School of Applied and Engineering Physics, Clark Hall. Students interested in this kind of program are advised to consult as early as possible with a professor active in the field of interest or with the associate director of the school, P. L. Hartman.

Master of Engineering (Engineering Physics)

In addition to preparing students for professional employment, the M.Eng (Engineering Physics) degree program serves as a basis for doctoral study in applied physics or in certain areas that involve a combination of engineering or applied physics with another professional but nontechnical discipline. Specific requirements for the degree are the following:

1) The required thirty credits must include (a) a minimum of six in related graduate-level courses; (b) a graduate-level course that provides a good background in quantum mechanics; and (c) a fourth-year or graduate-level course in statistical mechanics or the equivalent. If the student's undergraduate program included courses that satisfy these requirements, he or she may substitute other graduate courses. Undergraduate courses that permit exploratory work in a special field of interest may be allowed, on approval of the program chairman. A further program requirement is attendance at approximately fifteen University seminars or colloquia chosen in consultation with the program chairman.

2) An informal design study or project giving at least six credits is required. It may be experimental or analytical, but must represent individual effort and include a formal report. If the project is experimental, one graduate-level course in mathematics or applied mathematics is required; students whose mathematical background is not equivalent to that of graduates of the Cornell engineering physics undergraduate program may satisfy this requirement by taking one of the upperclass mathematics courses included in the Field Program in Engineering Physics. If the project is analytical, one graduate-level course in experimental laboratory physics, or its equivalent, is required.

Master of Science and Doctor of Philosophy

Programs offered by the graduate Field of Applied Physics are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Chemical Engineering

J. C. Smith, director; G. G. Cocks, C. Cohen, R. K. Finn, K. E. Gubbins, P. Harriott, R. P. Merrill, F. Rodriguez, G. F. Scheele, M. L. Shuler, R. G. Thorpe, R. L. Von Berg, H. F. Wiegandt

Bachelor of Science

The undergraduate Field Program in Chemical Engineering comprises a coordinated sequence of courses beginning in the sophomore year and extending through the fourth year. Special programs in biological engineering, polymeric materials, and chemical microscopy are available. Underclass students who plan to enter the Field Program in Chemical Engineering register for Chem 287–288, Chem 289–290, and Chem E 110 or 111 during the sophomore year. The program for the upperclass years is as follows:

Term 5	*Credits*
Chem 357, Organic Chemistry*	3
Chem 251, Organic Chemistry Laboratory	2
Chem E 311, Equilibria and Staged Operations	3
Chem E 430, Introduction to Rate Processes	3
Elective†	3
Liberal studies elective	3
Term 6	
Chem 358, Organic Chemistry*	3
Chem E 312, Chemical Engineering Thermodynamics	3
Chem E 321, Materials‡	4
Chem E 431, Analysis of Separation Processes	3
Liberal studies elective	3
Term 7	
Chem E 410, Reaction Kinetics and Reactor Design	3
Chem E 432, Chemical Engineering Laboratory	3
Chem E 461, Chemical Process Evaluation	3
Elective†	3
Liberal studies elective	3
Term 8	
Chem E 101, Nonresident Lectures	0
Chem E 462, Chemical Process Synthesis	4
Electives†	9
Liberal studies elective	3

* Students in the Engineering Cooperative Program substitute Chem 253 Organic Chemistry, a 4-credit course, for Chem 357; and Chem E 421 Industrial Organic Processes, a 2-credit course, for Chem 358.

† The electives in terms 5 to 8 must comprise three credits of the postponed engineering core science course (see the section on Basic Studies); six credits of technical electives; and at least six credits of free electives. One of the electives in term 8 should be in a chemical engineering subject.

‡ Students who have an approved plan for concentration in a minor topical area and who require more elective courses than the

Master of Engineering (Chemical)

The professional master's degree, M.Eng. (Chemical), is awarded at the end of one year of graduate study with successful completion of thirty credits of required and elective courses in technical fields including engineering, mathematics, chemistry, physics, and biology. Courses emphasize design and optimization based on the economic factors that affect process, equipment, and plant design alternatives. A design project is involved in the required courses. General admission and degree requirements are described in the introductory section under College of Engineering.

Master of Science and Doctor of Philosophy

Details of the programs for the M.S. and Ph.D. degrees with major or minor fields of study in chemical engineering are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Civil and Environmental Engineering

School of Civil and Environmental Engineering: R. N. White, director; G. B. Lyon, assistant director

Department of Structural Engineering: J. F. Abel, P. Gergely, A. R. Ingraffea, F. H. Kulhawy, W. McGuire, A. H. Nilson, T. D. O'Rourke, T. Peköz, D. A. Sangrey, F. O. Slate, R. N. White

Department of Environmental Engineering: D. P. Loucks, chairman; J. J. Bisogni, W. H. Brutsaert, F. J. Cesario, R. I. Dick, L. B. Dworsky, G. P. Fisher, C. D. Gates, J. M. Gossett, D. A. Haith, G. H. Jirka, J. A. Liggett, P. L.-F. Liu, R. C. Loehr, W. R. Lynn, A. H. Meyburg, N. Orloff, R. E. Schuler, C. Shoemaker, J. R. Stedinger

Program in Environmental Sensing, Measurement, and Evaluation: T. Liang, G. B. Lyon, A. J. McNair

Bachelor of Science

There are two subject departments in the School of Civil and Environmental Engineering, and a Program in Environmental Sensing, Measurement, and Evaluation. Undergraduate specialties can be arranged in a number of subject areas encompassed by these units. The major areas in the Department of Structural Engineering are: analysis, behavior, and design of structures; structural materials; and soils and foundations. Within the Department of Environmental Engineering there are five major areas: environmental quality engineering; fluid mechanics and hydrology; pulblic systems and environmental systems engineering; transportation; and water resources planning and analysis.

Students planning to enter the Field Program in Civil and Environmental Engineering as juniors are required to take T&AM 202, Mechanics of Solids, as one of the sophomore engineering core sciences. It is recommended that they also take OR&IE 260, Introductory Engineering Probability, and either T&AM 203, Dynamics, or MS&E 261, Mechanical Properties of Materials, as two of the other sophomore engineering core science courses. These three courses are required in the field program.

At the upperclass level the curriculum is planned to provide an introduction to the several diverse areas within the field of civil and environmental engineering and to permit more detailed study in at least one area through appropriate selection of electives. A recommended sequence, including the required courses, is given below.

Term 5	*Credits*
T&AM 203, Dynamics*	3
CEE C301, Fluid Mechanics I	4
CEE G301, Structural Engineering I	4
OR&IE 260, Introductory Engineering Probability*	3
Liberal studies elective	3
Term 6	
MS&E 261, Introduction to Mechanical Properties of Materials*	3
CEE E301, Environmental Quality Engineering	4
CEE D301, Introductory Soil Mechanics	3
CEE B303, Engineering Economics and Systems Analysis	3
Liberal studies elective	3
Term 7	
Civil and environmental engineering distribution courses (2)†	6
Technical elective	3
Free elective	3
Liberal studies elective	3
Term 8	
Civil and environmental engineering distribution courses (2)†	6
Technical elective	3
Free elective	3
Liberal studies elective	3

A student with a well-defined special interest may develop a more individualized program in consultation with a faculty adviser from the school and submit it to the Field Curriculum Committee for approval. It is advisable for a student planning such a program to submit an application as early as the first term of the sophomore year.

Master of Engineering (Civil)

The M.Eng. (Civil) degree program is designed to prepare a student for professional practice in civil and environmental engineering. Requirements, in addition to the general ones for the degree (see the introductory section under College of Engineering), include three required courses: one in professional engineering practice, CEE K520, and two in design, CEE K510 and K511. The design sequence requires the completion of a project involving synthesis, analysis, decision making, and application of engineering judgment, and includes an intensive, full-day, three-week session between semesters.

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number scheduled to accomplish their goals may substitute additional electives for Chem E 321, Materials (provided that MS&E 261, Introduction to Mechanical Properties of Materials, has been chosen as an engineering core science during the sophomore year). This option could be of interest to students planning concentrations in such areas as biological engineering, environmental studies, advanced chemistry, and systems and operations research.

* Satisfactory completion of these engineering core science courses in the Division of Basic Studies increases the number of technical electives accordingly.

† Information about distribution requirements may be obtained from the student's faculty adviser.

The remainder of a student's program of studies is designed individually in consultation with an academic adviser and then submitted to the school's Professional Degree Committee for approval. The objectives in course planning are to provide breadth in the fundamentals of civil and environmental engineering, and specialization in one area with some concentration in a related area. Most students will have achieved the necessary breadth during their undergraduate years. Some, however, may require additional course work in the graduate program to fulfill the breadth requirement. Students in the School of Civil and Environmental Engineering may avail themselves of a number of graduate course offerings in fields related to their major interest but outside of the school.

Master of Science and Doctor of Philosophy

The requirements for the degrees of Master of Science and Doctory of Philosophy are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Computer Science

R. W. Conway, acting chairman; G. R. Andrews, R. S. Cartwright, R. L. Constable, A. J. Demers, J. E. Dennis, Jr., J. E. Donahue, D. J. Gries, J. Hartmanis, J. E. Hopcroft, F. Luk, W. L. Maxwell, C. Pottle, G. Salton, R. Teitelbaum, F. Schneider, C. F. Van Loan, J. H. Williams

At Cornell computer science is concerned with fundamental knowledge in automata, computability, programming languages, and systems programming, as well as with subjects (such as numerical analysis and information processing) that underlie broad areas of computer applications. Because of the wide implications of research in the field, the Department of Computer Science is organized as an intercollege department in the College of Arts and Sciences and the College of Engineering.

Bachelor of Science

Although the department teaches a comprehensive set of undergraduate courses, there is no undergraduate field program in computer science in the College of Engineering. To major in computer science the student may use the College Program leading to the degree of Bachelor of Science (see the section above on College Program under Bachelor of Science Degree.)

Master of Science and Doctor of Philosophy

Programs in the graduate Field of Computer Science are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Electrical Engineering

G. C. Dalman, director; J. L. Rosson, associate director; P. D. Ankrum, J. M. Ballantyne, T. Berger, H. D. Block, R. Bolgiano, Jr., N. H. Bryant, R. R. Capranica, H. J. Carlin, L. F. Eastman, W. H. Erickson, D. T. Farley, T. L. Fine, J. Frey, D. W. Hammerstrom, W. J. Heetderks, M. C. Kelley, M. Kim, W. H. Ku, C. A. Lee, R. L. Liboff, S. Linke, R. A. McFarlane, H. S. McGaughan, P. R. McIsaac, J. A. Nation, B. Nichols, E. Ott, C. Pottle, R. N. Sudan, C. L. Tang, R. J. Thomas, J. S. Thorp, H. C. Torng, N. M. Vrana, C. B. Wharton, G. J. Wolga

Bachelor of Science

Reflecting the large scope of this engineering discipline, the undergraduate Field Program in Electrical Engineering provides a broad foundation in a number of important areas in addition to specialization in one or more.

Students can choose, for example, to concentrate in bioengineering; computer engineering; control systems; electronic circuit design; information, communications, and decision theory; microwave electronics; plasma physics; power and energy systems; quantum and optical electronics; radio and atmospheric physics; or semiconductor devices and applications.

Required courses are included in the following standard curriculum for the field program:

Term 5	*Credits*
Ele E 301, Electrical Signals and Systems I	4
Ele E 303, Electromagnetic Theory I	4
Ele E 315, Electrical Laboratory I	4
Ele E 230, Introduction to Digital Systems*	3
Liberal studies elective	3
Term 6	
Ele E 306, Fundamentals of Quantum and Solid-State Electronics	4
Ele E 316, Electrical Laboratory II	4
Ele E elective†	4
Ele E elective†	3 or 4
Liberal studies elective	3
Term 7	
Ele E elective†	3 or 4
Ele E elective with laboratory	3 or 4
Technical elective	3
Free elective	3
Liberal studies elective	3
Term 8	
Ele E elective†	3 or 4
Ele E elective with laboratory	3 or 4
Technical elective	3
Free elective	3
Liberal studies elective	3

Specialization is achieved through the four senior-year electrical engineering electives, which are selected from more than sixty offerings of the school. With the approval of his or her faculty adviser, a student with special career goals may substitute appropriate technical or professional electives for two electrical engineering electives.

A brochure describing the field program and concentrations in detail may be obtained from the School of Electrical Engineering, Phillips Hall.

Master of Engineering

The degree of M.Eng. (Electrical) prepares the student either for professional work in this area of engineering or for more advanced graduate study in the doctoral program. The M.Eng. differs from the M.S. program mainly in its emphasis, which is on design capability rather than

* Satisfactory completion of Ele E 230 as a core science in the Division of Basic Studies allows for the substitution of a technical elective for this requirement.

† One Ele E elective must be selected from among 302, 304, 310, or 407. One Ele E elective must be selected which has either 302, 304, 306, or 310 as a prerequisite.

research. The thirty-credit M.Eng. (Electrical) curriculum includes two two-term course sequences in electrical engineering and the design project, which gives three to twelve credits. General admission and degree requirements are described in the introductory section under College of Engineering.

Master of Science and Doctor of Philosophy

Descriptions of the M.S. and Ph.D. degree programs are given in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Geological Sciences

J. E. Oliver, chairman; W. A. Bassett, J. M. Bird, A. L. Bloom, L. D. Brown, J. L. Cisne, B. L. Isacks, D. E. Karig, S. Kaufman, R. W. Kay, F. H. T. Rhodes, W. B. Travers, D. L. Turcotte

Bachelor of Science

Study in geological sciences is offered for students who are preparing for careers in solid earth science, for those who want a broad background in the geological sciences as preparation for careers in other fields, or for those who wish to combine geological training with other sciences such as agronomy, astronomy and space science, biological sciences, chemistry, economics, mathematics, physics, or various fields of engineering. The Department of Geological Sciences is organized as an intercollege department in the College of Arts and Sciences and the College of Engineering. College of Arts and Sciences students should consult the section on geological sciences given under that college as well as the course listing here.

In the College of Engineering, students interested in entering the Field Program in Geological Sciences follow the Basic Studies Program for the first two years. It is recommended that Geol 101 and 102, Chem 208, and, for those students interested in geobiology, Bio S 101–102 and 103–104 be taken as electives during this period. The upperclass curriculum is as follows:

Term 5	*Credits*
Geol 355	4
Geol 376	4
Required science course	3 or 4
Liberal studies elective	3
Technical or free elective	3 or 4
Term 6	
Geol 356	4
Geol 325	4
Required science course	3 or 4
Liberal studies elective	3
Geol 704	6
or	
Technical or free elective	3 or 4

A summer field course is required unless approval for an alternative field experience is granted.

Term 7	
Geol 345	4
Required science course	3 or 4
Liberal studies elective	3
Technical or free elective	3 or 4
Term 8	
Geol 388	4
Required science course	3 or 4
Liberal studies elective	3
Technical or free elective	3 or 4
Free elective	3 or 4

Students intending to specialize in *geophysics* should select their *required sciences* from the following courses or their equivalents: Math 421–422–423, Applicable Mathematics; T&AM 310–311, Advanced Engineering Analysis I and II; A&EP 355, Intermediate Electromagnetism; A&EP 333, Mechanics of Particles and Solid Bodies; A&EP 356, Intermediate Electrodynamics; A&EP 434, Continuum Physics; Phys 410, Advanced Experimental Physics; T&AM 450, Introduction to Continuum Mechanics.

Students intending to specialize in *geochemistry* (including petrology, mineralogy, and mineral deposits) should select their *required sciences* from the following courses or their equivalents: Chem 287–288, Introductory Physical Chemistry; Chem 300, Introductory Quantitative Analysis; Chem 301, Experimental Chemistry I; Chem 302, Experimental Chemistry II; Chem 303, Experimental Chemistry III; Chem 357–358, Introductory Organic Chemistry; Chem 389–390, Physical Chemistry I and II; MS&E 331, Structure and Properties of Materials; MS&E 335, Thermodynamics of Condensed Systems.

Students intending to specialize in *geobiology* should select their *required sciences* from the following courses or their equivalents: Bio S 310, Invertebrate Zoology; Bio S 330–331, Principles of Biochemistry; Bio S 245, Plant Biology; Bio S 448, Plants and Time (paleobotany); Bio S 360, General Ecology; Bio S 274, The Vertebrates; Bio S 477, Organic Evolution; Bio S 281, Genetics; Chem 253, Elementary Organic Chemistry; Geol 471, Invertebrate Paleontology.

Students who wish to pursue further training or immediate employment in *applied geology* (environmental/engineering geology, mineral exploration and exploitation, ground water, petroleum geology, or geological engineering) should select their *required sciences* from the following courses or their equivalents, with two of the four from the same field: Agron 301, Identification, Appraisal, and Geography of Soils; Agron 701, Soil Chemistry; Agron 607, Soil Physics; CEE D301, Introductory Soil Mechanics; CEE D610, Engineering Behavior of Soils; CEE A685, Physical Environment Evaluation; MS&E 331, Structure and Properties of Materials; MS&E 466, Mechanical Properties of Materials; CEE C301, Fluid Mechanics I; CEE C302, Hydraulic Engineering; CEE E301, Environmental Quality Engineering; Math 421–422–423, Applicable Mathematics; OR&IE 260, Introductory Engineering Probability; OR&IE 370, Introduction to Statistical Theory with Engineering Applications.

Students who want a more general background, or who wish to remain uncommitted with regard to specialty, must choose at least two of the four required science courses from the same field, and all four required science courses must be at the 300 level or above. The technical electives may be chosen from offerings in geological sciences or in other science or engineering fields, and may be courses also approved as required sciences. Outstanding students may request substitution of an honors thesis for a fourth-year technical elective.

Students intending to pursue graduate study in geology are reminded that many graduate schools require proficiency in reading the scientific literature in one or two of the three languages French, German, or Russian. Undergraduate preparation in at least one of these languages is therefore advantageous.

Master of Science and Doctor of Philosophy

The Department of Geological Sciences maintains a number of strong interdisciplinary research programs. The curriculum is designed to accommodate students who are trained in geology or who have no introductory education in geology but are otherwise well qualified. A strong background in mathematics and the basic sciences is recommended. Descriptions of the program are given in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Materials Science and Engineering

A. L. Ruoff, director; D. G. Ast, B. W. Batterman, J. M. Blakely, D. T. Grubb, E. W. Hart, H. H. Johnson, E. J. Kramer, D. L. Kohlstedt, C. Y. Li, R. Raj, S. L. Sass, D. N. Seidman

Bachelor of Science

No particular engineering core science is required for entry into the upperclass Field Program in Materials Science and Engineering. The basic upperclass curriculum, which includes the required field courses, is given below. The sequence of the courses may vary, however, in accordance with the plan worked out by each student in consultation with his or her faculty adviser.

Term 5	*Credits*
MS&E 331, Structure and Properties of Materials	4
MS&E 335, Thermodynamics of Condensed Systems	3
MS&E 333, Research Involvement I or a Field-approved option elective*	3
Free elective	3
Liberal studies elective	3
Term 6	
MS&E 336, Kinetics, Diffusion, and Phase Transformations	3
MS&E 446, Mechanical Properties of Materials	3
MS&E 334, Research Involvement II or a Field-approved option elective*	3
Free elective	3
Liberal studies elective	3
Term 7	
MS&E 445, Electrical and Magnetic Properties of Materials	3
MS&E 440, Macroprocessing of Materials	3
MS&E 443, Senior Materials Laboratory I†	3
Technical elective	3
Liberal studies elective	3
Term 8	
MS&E 441, Microprocessing of Materials	3
MS&E 448, Current Topics in Materials	3
MS&E 444, Senior Materials Laboratory II	3
Technical elective	3
Liberal studies elective	3

* The Research Involvement option gives undergraduates the opportunity to work with faculty members and their research groups on current projects. The alternative option elective provides students interested in industrial careers an additional opportunity to broaden their engineering education.

† One term of Senior Laboratory may be replaced by Phys 360, Introductory Electronics, or by a one-term project in association with a faculty member.

Students with a special interest in processing and applications are advised to include in their elective courses MS&E 447, Applied Metallurgy; MS&E 337, Materials and Manufacturing Processes; and MS&E 338, Analysis of Manufacturing Processes.

Master of Engineering (Materials)

Students who have completed a four-year undergraduate program in engineering or the physical sciences are eligible for consideration for admission to the M.Eng. (Materials) program, which includes the following:

1) A project qualifying for at least twelve credits and requiring individual effort and initiative. This project, carried out under the supervision of a member of the faculty, is usually experimental, although it can be analytical.
2) Six credits of courses in mathematics or applied mathematics. This requirement may be satisfied by courses T&AM 310 and 311; students who have previously completed these must select other courses acceptable to the faculty.
3) Courses in materials science and engineering selected from any of those offered at the graduate level, or other courses approved by the faculty, required to bring the total credits to thirty.

General admission and degree requirements are described in the introductory section under College of Engineering.

Master of Science and Doctor of Philosophy

Graduate programs in materials science and engineering are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Mechanical and Aerospace Engineering

A. R. George, director; J. F. Booker, assistant director; P. L. Auer, D. L. Bartel, A. H. Burstein, D. A. Caughey, B. J. Conta, P. C. T. deBoer, F. C. Gouldin, S. Jahanmir, S. Leibovich, R. L. Levin, J. L. Lumley, W. J. McLean, F. K. Moore, R. M. Phelan, S. L. Phoenix, E. L. Resler, Jr., S. F. Shen, D. L. Taylor, K. E. Torrance, K. K. Wang, Z. Warhaft, R. L. Wehe

Members of the faculty of the graduate Fields of Aerospace Engineering and of Mechanical Engineering are listed in the *Announcement of the Graduate School*.

Bachelor of Science

Mechanical Engineering

The upperclass Field Program in Mechanical Engineering is designed to provide a broad background in this basic branch of engineering, as well as an introduction to the many professional and technical areas with which mechanical engineering is particularly concerned. Two main areas of concentration, corresponding to the two major streams of mechanical engineering technology, are offered in the field program.

Mechanical Systems and Design is concerned with those aspects of mechanical engineering that involve the design, analysis, and manufacture of devices, machines, and systems. Particular areas of concentration that are available are mechanical design and analysis, vehicle engineering, and manufacturing engineering.

Engineering of Energy and Fluid Systems is concerned with (1) the conversion of energy for various requirements for electric power and transportation (terrestrial and aerospace); (2) the study of environmental modification, which involves such areas as pollution control, refrigeration and air conditioning, acoustics and noise, and combustion engines; and (3) theoretical and experimental aspects of fluid dynamics and heat transfer.

The Field Program is open to students who have taken the course T&AM 202, Mechanics of Solids, as one of the sophomore engineering core sciences. It is recommended that underclass students who definitely intend to major in mechanical engineering also take as engineering core sciences the courses T&AM 203, Dynamics, and M&AE 221, Thermodynamics, which are required for the field program. Another course required for the field program that can be taken as a sophomore core science is Ele E 210, Introduction to Electrical Systems. Also, a student who takes MS&E 261, Introduction to Mechanical Properties of Materials, as a core science in DBS need not necessarily take M&AE 311, Materials and Manufacturing Processes, which is normally part of the field program.

The courses required for the Field Program in Mechanical Engineering are included in the curriculum sample outlined below. It should be noted that if some of the field requirements are fulfilled in DBS, as recommended, released electives may be substituted for them; it should also be noted that many courses may be taken in different terms from the ones indicated below.

Term 5	*Credits*
T&AM 203, Dynamics	3
M&AE 221, Thermodynamics	3
M&AE 311, Materials and Manufacturing Processes	3
Mathematics elective	3
Liberal studies elective	3
Term 6	
M&AE 325, Mechanical Design and Analysis	4
M&AE 323, Fluid Mechanics	4
Ele E 210, Introduction to Electrical Systems	3
Field elective	3
Liberal studies elective	3
Term 7	
M&AE 324, Heat Transfer and Transport Processes	3
M&AE 326, Systems Dynamics	3
M&AE 453, Mechanical Engineering Laboratory	4
Technical elective	3
Liberal studies elective	3
Term 8	
Field elective	3
Technical elective	3
Free elective	3
Free elective	3
Liberal studies elective	3

The mathematics elective is chosen from an approved list. The two field electives are selected from upperclass courses offered in mechanical and aerospace engineering.

Aerospace Engineering

Although there is no separate undergraduate program in aerospace engineering, students may prepare for a career in this area by majoring in mechanical engineering and taking a number of aerospace engineering electives, such as M&AE 305, 536, 606, and 607. Students may prepare for the graduate program in aerospace engineering by majoring in mechanical engineering or through other appropriate engineering specialities such as electrical engineering, engineering physics, or physical science. Other subjects recommended as preparation for graduate study include thermodynamics, fluid mechanics, applied mathematics, chemistry, and physics.

Master of Engineering (Aerospace)

The Master of Engineering (Aerospace) program is designed to increase the student's facility in the application of the basic sciences to important professional problems. Because aerospace engineering is continually engaged in new areas, an essential guideline for the program is to reach beyond present-day practices and techniques. This is achieved by supplying the student with the fundamental background and the analytical techniques that will remain useful in all modern engineering developments.

General admission and degree requirements are described in the introductory section under College of Engineering.

Required courses for the M.Eng. (Aerospace) degree include four three-credit core courses. Available core courses are:

	Credits
M&AE 459, Plasmadynamics	3
M&AE 506, Aerospace Propulsion Systems	3
M&AE 507, Dynamics of Flight Vehicles	3
M&AE 543, Combustion Processes	3
M&AE 602, Aerodynamics I	3
M&AE 603, Aerodynamics II	3
M&AE 608, Physics of Fluids I	3
M&AE 610, Gasdynamics	3
M&AE 630, Atmospheric Turbulence and Micrometeorology	3
M&AE 632, Theoretical Fluid Mechanics I	3
M&AE 633, Theoretical Fluid Mechanics II	3
M&AE 648, Seminar on Combustion	3
M&AE 653, Experimental Methods in Fluid Mechanics and Combustion	3
M&AE 670, Mechanical and Aerospace Structures II	3
M&AE 734, Turbulence and Turbulent Flow	3
M&AE 737, Numerical Methods in Fluid Flow and Heat Transfer	3

Also required are six credits of elective subjects. A list of suggested electives is available from the Program Representative, M.Eng. (Aerospace), in Grumman Hall. Further requirements are six credits of mathematics (T&AM 610–611 or Math 415–416 or the equivalent), participation in the weekly colloquium (one credit each term), one advanced seminar (two credits), and one professional design project (two credits). This makes a total of thirty credits.

The school has particular strengths in the areas of fluid dynamics, aerodynamics, high-temperature gasdynamics, turbulence, chemical kinetics, aerodynamic noise, sonic boom, nonlinear waves, atmospheric flows, combustion processes in low-pollution engines, and solution of flow problems by finite element and numerical methods. Professional design projects may be arranged in any of these areas.

Master of Engineering (Mechanical)

The Master of Engineering (Mechanical) degree program provides a one-year course of study for those who wish to develop a high level of competence in current technology and engineering design.

The program is designed to be flexible so that candidates may concentrate on any of a variety of specialty areas. These areas include bioengineering, machine dynamics and control, mechanical analysis and development, vehicles and propulsion, propulsion engines, energy systems, thermal environment, manufacturing engineering, and materials removal. An individual student's curriculum includes a six-credit design project, a major consisting of a minimum of twelve credits, and sufficient technical electives to meet the degree requirement of thirty credits.

The design project, which may be undertaken individually or by a small team, is a significant part of the program. Although "design" is interpreted broadly, the project should clearly involve the creation and evaluation of alternative solutions to an engineering problem. Each student chooses a project from a list of those offered by the faculty, or proposes a project and finds a faculty member who will agree to serve as adviser. Some recent projects have been concerned with the design and analysis of crankshaft and crankcase structures, the development of equipment for holographic interferometry measurements, the design of orthopedic implants, the University's energy policy, energy self-sufficiency, a new type of wind turbine, pollution control in automobile engines, motorcycle suspensions, and the analysis and design of flywheel-internal combusion engine hybrid drives for short-range cars.

A coordinated program of courses for the entire year is agreed upon by the student and his or her adviser. The proposed curriculum, together with a statement of overall objectives and a statement of the purpose of the major, is submitted for approval to the Master of Engineering Committee in the School of Mechanical and Aerospace Engineering. Any subsequent changes must also be approved by this committee.

The courses that constitute the major must be graduate-level courses in mechanical and aerospace engineering or a closely related field such as theoretical and applied mechanics. At least twenty-one credits of the total for the degree must be in mechanical engineering or related areas, and in general all courses must be beyond the level of those required in the undergraduate program in mechanical engineering. Credit may be granted for an undergraduate, upper-level first course in some subject area if the student has done little or no previous work in that area, but such courses must have the special approval of the Master of Engineering Committee.

The technical electives may be courses of appropriate level in mathematics, physics, chemistry, or engineering; a maximum of six credits may be taken in areas other than these if the courses are part of a well-defined program leading to specific professional objectives. It is expected that all students will use technical electives to develop proficiency in mathematics beyond the minimum required of Cornell undergraduates if they have not already done so before entering the program. Courses in advanced engineering mathematics or statistics are particularly recommended.

Master of Science and Doctor of Philosophy

Programs in the graduate Fields of Aerospace Engineering and of Mechanical Engineering are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Nuclear Science and Engineering

Faculty members of the graduate Field of Nuclear Science and Engineering are listed in the *Announcement of the Graduate School*. Many of these professors are members of the School of Applied and Engineering Physics, which offers most of the course work in this area.

Undergraduate Study

Although there is no special undergraduate field program in nuclear science and engineering, students who intend to enter graduate programs in this area are encouraged to begin specialization at the undergraduate level. This may be done by choice of electives within regular field programs (such as those in engineering physics, materials science and engineering, and civil, chemical, electrical, or mechanical engineering) or within the College Program.

College Programs

The suggested curriculum for the College Program in Nuclear Engineering includes A&EP 303 and 304, Introduction to Nuclear Science and Engineering I and II, plus two of the four courses A&EP 612, A&EP 651, A&EP 633, and A&EP 609. Also available is the College Program in Energy Conversion, a synthesis of nuclear, thermal, and electrical engineering. See the introductory section under College of Engineering for a general description of the College Program.

Master of Engineering (Nuclear)

The two-term curriculum leading to the degree of M.Eng. (Nuclear) is intended primarily for individuals who want a terminal professional degree, but it may also serve as preparation for doctoral study in nuclear science and engineering. The course of study covers the basic principles of nuclear reactor systems with a major emphasis on reactor safety and radiation protection and control. The special facilities of the Ward Laboratory of Nuclear Engineering are described in the *Announcement of the Graduate School*.

The interdisciplinary nature of nuclear engineering allows students to enter from a variety of undergraduate specializations. The recommended background is: (1) an accredited baccalaureate degree in engineering, physics, or applied science; (2) physics, including atomic and nuclear physics; (3) mathematics, including advanced calculus, and (4) thermodynamics. Students should see that they fulfill these requirements before beginning the program. In some cases, deficiencies in preparatory work may be made up by informal study during the preceding summer. General admissions and degree requirements are described in the introductory section under College of Engineering.

The following courses are included in the thirty-credit program:

Fall term
A&EP 612, Nuclear Reactor Theory I
A&EP 633, Nuclear Reactor Engineering
A&EP 609, Low-Energy Nuclear Physics
Technical elective

Spring term
A&EP 651, Nuclear Measurements Laboratory
Technical elective
Engineering design project
Mathematics or physics elective

Engineering electives should be in a subject area relevant to nuclear engineering such as energy conversion, radiation protection and control, feedback control systems, magnetohydrodynamics, controlled thermonuclear fusion, and environmental engineering. Typical examples are: M&AE 651, Transport Processes II; Ele E 681, Introduction to Plasma Physics; Ele E 682, Advanced Plasma Physics; M&AE 622, Introductory Magnetohydrodynamics; and Ele E 671–672, Feedback Control Systems.

Master of Science and Doctor of Philosophy

Programs in the graduate Field of Nuclear Science and Engineering are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science*.

Operations Research and Industrial Engineering

G. L. Nemhauser, director; W. L. Maxwell, associate director; N. U. Prabhu, graduate faculty representative; R. E. Bechhofer, L. J. Billera, R. G. Bland, J. A. Bloom, T. Boucher, R. W. Conway, D. C. Heath, W. F. Lucas, J. A. Muckstadt, T. J. Santner, B. W. Saunders, L. W. Schruben, A. Schultz, Jr., M. S. Taqqu, H. M. Taylor 3d, M. J. Todd, L. E. Trotter, Jr., B. W. Turnbull, L. I. Weiss

Bachelor of Science

During the sophomore year in the Division of Basic Studies, a student who plans to enter the Field Program in Operations Research and Industrial Engineering must elect, as one of the four engineering core sciences, OR&IE 260, Introductory Engineering Probability. Other recommended core sciences are OR&IE 213, Ele E 210, T&AM 202, and Com S 211. Early consultation with an OR&IE faculty member or with the associate director can be helpful in making appropriate choices. In the junior year the following courses are required:

Term 5	*Credits*
OR&IE 320, Optimization I	4
OR&IE 350, Cost Accounting, Analysis, and Control	4
OR&IE 370, Introduction to Statistical Theory with Engineering Applications	4
Com S 211, Computers and Programming*	3
Liberal studies elective	3
Term 6	
OR&IE 321, Optimization II	3
OR&IE 361, Introductory Engineering Stochastic Processes	4
OR&IE 383, Introduction to File Processing and Simulation	4
Behavioral science†	3
Liberal studies elective	3

* If Com S 211 is completed during the sophomore year, an appropriate three-credit technical elective may be substituted by agreement with the OR&IE adviser.

† The behavioral science requirement can be satisfied by any one of several courses of an advanced nature, including B&PA 540 (recommended for those contemplating the pursuit of a graduate business degree), B&PA 541, ILR 121, ILR 150, and ILR 151. The adviser must approve the selection in all cases.

The basic senior-year program, from which individualized programs are developed, comprises the following courses:

	Credits
Four courses consisting of two two-course sequences as described below	minimum of 12
Two technical electives (these need not be sequential)	6
Two liberal studies electives	6
Two free electives	6
Available OR&IE sequences are as follows:	
Industrial systems: OR&IE 410 and 421*	8
Information systems: OR&IE 682 and Com S 414	8
Optimization methods: OR&IE 435 and 432, or 435 and 431	6
Applied statistics: OR&IE 471 and 561, or 471 and 570	7

* This sequence must be selected by students who plan to participate in the cooperative program with the Graduate School of Business and Public Administration.

Students who have established specific career goals and wish to apply the OR&IE methodology in other technological areas may substitute a course sequence appropriate to the outside discipline for one of the required OR&IE sequences. Examples of possible sequences outside OR&IE are:

	Credits
Manufacturing systems: M&AE 311 and 512	6
Transportation systems: CEE F621 and F624	7
Public systems: CEE B617 and either F624 or H628	6
Electrical systems: Ele E 301 and 302	8
Computer systems: Ele E 675 and 676	6
Numerical methods: Com S 321 and 322	8
Information systems: Com S 613 and 635	8

Other sequences are possible and should be checked with the student's adviser.

These options, together with an appropriate choice of technical electives, enable a student to earn at least twelve credits in a technological field other than OR&IE. Through an appropriate choice of free electives also, as many as eighteen credits can be earned in the secondary discipline.

Scholastic requirements for the field are a passing grade in every course, maintenance of a cumulative grade-point average of at least 2.0, maintenance of at least a 2.0

average for those courses taken while enrolled in the School, and satisfactory progress toward the completion of the degree requirement. The student's performance is reviewed at the conclusion of each term.

Master of Engineering (OR&IE)

This one-year professional degree program is application-oriented rather than research-oriented, and requires completion of a project. The course work centers on additional study of analytical techniques, with particular emphasis on engineering applications, especially in the design of new or improved man-machine systems, information systems, and control systems.

General admission and degree requirements are described in the introductory section under College of Engineering. The M.Eng. (OR&IE) program is integrated with the undergraduate degree program in OR&IE, and students who apply during their senior year will generally be admitted. Also welcome are requests for admission from Cornell undergraduates in engineering programs other than OR&IE, or from qualified non-Cornellians. To ensure completion of the program in one calendar year, the entering student should have completed courses in probability theory and basic probabilistic models and in computer programming, and should have acquired some fundamental knowledge of economic concepts required for decision making.

The two parallel course programs leading to the M.Eng. (OR&IE) degree are outlined below.

I. For matriculants with preparation comparable to that provided by the undergraduate Field Program in OR&IE:

Fall term	*Credits*
OR&IE 516, Mathematical Models — Development and Application	4
OR&IE 680, Digital Systems Simulation	4
OR&IE 893, Applied OR&IE Colloquium	1
OR&IE 899, Project	1
Depth elective	minimum of 3
Breadth elective	minimum of 3
Spring term	
OR&IE 551, Advanced Engineering Economic Analysis	4
OR&IE 894, Applied OR&IE Colloquium	1
OR&IE 899, Project	minimum of 4
Depth elective	minimum of 3
Breadth elective	minimum of 3

The electives specified above will normally be chosen from graduate courses offered by the School of Operations Research and Industrial Engineering. The depth elective will generally continue study in one of the topics elected to satisfy one of the fourth-year sequence requirements. The breadth elective will generally be one of these sequences available in the fourth year (see listing under Bachelor of Science) but not selected by the student for the undergraduate curriculum.

II. For matriculants from other major fields of engineering who fulfill the basic prerequisite requirements but do not qualify for Program I:

Fall term	*Credits*
OR&IE 370, Introduction to Statistical Theory with Engineering Applications	4
OR&IE 622, Operations Research I	3
OR&IE 516, Mathematical Models — Development and Application	4
OR&IE 893, Applied OR&IE Colloquium	1
OR&IE 899, Project	1
Professional elective	minimum of 3
Spring term	
OR&IE 383, Introduction to File Processing and Simulation	4
OR&IE 623, Operations Research II	3
OR&IE 551, Advanced Engineering Economic Analysis	4
OR&IE 894, Applied OR&IE Colloquium	1
OR&IE 899, Project	minimum of 4
Professional elective	minimum of 3

The M.Eng. (OR&IE) student fulfills the project requirement by working individually or as part of a group of no more than four students on an operational systems problem that actually exists in some organization. Appropriate problems are suggested by various operating organizations such as manufacturing firms, retailing organizations, service organizations, government agencies, and educational institutions.

Cooperative Program with Business and Public Administration

Of the three degree programs offered by the School of Business and Public Administration at Cornell, the Master of Business Administration program is of most interest to engineers. Because modern management is concerned with the operations of production and service systems, much of the analytical methodology required to deal with operating decisions is the same as that used by systems engineers in designing the systems. Therefore, there are several subjects required in the M.B.A. program which OR&IE students take as undergraduates, and an agreement between the School of Operations Research and Industrial Engineering and the Graduate School of Business and Public Administration provides an opportunity to complete the M.B.A. program in one additional year following completion of the M.Eng. degree requirements.

Essential aspects of this combined six-year B.S./M.Eng./M.B.A. program are:

1) that the OR&IE candidate have completed by course work, advanced standing, or exemption examinations, the core course work required for the M.B.A. degree, except for Business Policy, by the end of the fifth year;
2) that thirty credits, at most, of advanced standing will be awarded by the School of Business and Public Administration for work done before the start of the sixth year in the undergraduate B.S. program, in the M.Eng. program, and in Business and Public Administration;
3) that during the sixth year, over a period of two semesters, the candidate will earn twenty-six credits in elective courses approved by Business and Public Administration, plus four credits for Business Policy.

The candidate would qualify for the B.S. degree at the end of four years, the M.Eng. degree at the end of five years, and the M.B.A. degree at the end of six years.

Further details and applications forms for this special program may be obtained from the office of the School of Operations Research and Industrial Engineering, Upson Hall.

Master of Science and Doctor of Philosophy

Programs available in the Graduate Field of Operations Research are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science.*

Structural Engineering

See Civil and Environmental Engineering.

Theoretical and Applied Mechanics

Y. H. Pao, chairman; H. D. Block, J. A. Burns, H. D. Conway, P. A. Dashner, E. W. Hart, P. J. Holmes, J. T. Jenkins, R. H. Lance, G. S. S.Ludford, F. C. Moon, S. Mukherjee, R. H. Rand, W. H. Sachse

Undergraduate Study

The Department of Theoretical and Applied Mechanics is responsible for courses in engineering mechanics and engineering mathematics, some of which are part of the underclass engineering curriculum in the Division of Basic Studies.

College Program in Engineering Science

Although no upperclass field program is offered by the Department of Theoretical and Applied Mechanics, a student may enroll in the College Program in Engineering Science, which is sponsored by the department. The College Program is described in the introductory section under College of Engineering.

Master of Engineering (Engineering Mechanics)

Students who are interested in advanced study in mechanics and who intend to emphasize engineering practice rather than teaching or research may apply for admission to the M.Eng. (Engineering Mechanics) degree program. General admission and degree requirements are described in the introductory section under College of Engineering. Specific requirements for the M.Eng. (Engineering Mechanics) degree are:

1) Completion of a minimum of three credits of work on an individual project, either analytical or experimental, under the direction of a faculty member.
2) Satisfactory completion of six credits of 600-level courses in mathematics or applied mathematics.
3) Courses in or related to theoretical and applied mechanics, selected in consultation with the student's adviser from those offered at the graduate level, to bring the total credits to at least thirty.

Master of Science and Doctor of Philosophy

The research-oriented degree programs offered by the graduate Field of Theoretical and Applied Mechanics are described in the *Announcement of the Graduate School* and *Graduate Study in Engineering and Applied Science.*

Graduate School

Administration

William W. Lambert, Dean
Alison P. Casarett, Associate Dean
Benjamin P. Bowser, Assistant Dean
Donald P. Hayes, Secretary of the Graduate Faculty

Graduate study at Cornell is pursued through the Graduate School, which administers the many graduate fields of study, and through the various graduate professional schools and colleges.

Graduate School

The graduate program at Cornell permits an unusual degree of accommodation to the needs and interests of the individual student. Degree requirements are kept to a minimum. There are no specific course-hour requirements for the advanced general degrees of Master of Arts, Master of Science, and Doctor of Philosophy but only such general requirements that best accomplish the aim of graduate study: a period of study in residence, the mastery of some one subject, adequate acquaintance with allied subjects, oral examinations to establish competency for presentation of a thesis, and a satisfactory thesis. Certain advanced professional degree programs have specific course-hour requirements; these are announced by the faculty of the professional school or college in which the degrees are offered.

A close working relationship with faculty is essential to the graduate program at Cornell. Under the Special Committee system, the student is guided by and works with at least two or three faculty members, chosen by the student to represent his or her major and minor subjects. The major subject representative is the chairperson of the Special Committee and usually has the primary responsibility for directing the student's thesis research.

Students wishing to use the University's facilities for intensive specialized training only, and who do not wish to become degree candidates, may apply for admission as nondegree candidates.

Requirements for Admission

To be admitted to the Graduate School an applicant should

1) hold a baccalaureate degree granted by a faculty or university of recognized standing or have completed studies equivalent to those required for a baccalaureate degree at Cornell;
2) have adequate preparation for graduate study in the chosen field of instruction;
3) have fluent command of the English language;
4) present evidence of promise in advanced study and research; and
5) have a combined score of 1200 in the Aptitude Tests of the Graduate Record Examinations for those fields which require the GRE.

Students from United States colleges and universities should be in the top third of their graduating class.

Before admission can be final, all applicants whose native language is not English must provide proof of competency in the English language. Acceptable proof could be (1) a degree from a college or university in a

country where the native language is English; or (2) two or more years of study in an undergraudate or graduate program in a country where the native language is English; or (3) a TOEFL (Test of English as a Foreign Language) score of 550 or higher.

Information on times and places and an application form may be obtained from the Educational Testing Service, Princeton, New Jersey 08540.

Applications for admission to the Graduate School may be submitted at any time throughout the year. Many fields, however, require that applicants for fall admission submit their completed applications by January 15.

Applicants who are simultaneously applying for fellowship consideration must submit their completed applications and supporting credentials by January 15.

Inquiries regarding admission and fellowships should be addressed to the Dean of the Graduate School, Cornell University, Sage Graduate Center, Ithaca, New York 14853.

Information concerning admission requirements and courses of study for professional degrees may be obtained from the several schools and colleges which administer them.

Inquiries regarding facilities for advanced study and research in a given field, special requirements for such study and research, and opportunities for teaching and research assistantships should be addressed to the graduate faculty representative in the particular field.

For further information see the *Announcement of the Graduate School,* which may be obtained from the Sage Graduate Center at the address above.

School of Hotel Administration

Administration

Robert A. Beck, Dean

Normand L. Peckenpaugh, Director of Administration, Finance, and Operations

Paul Beals, Acting Executive Editor, *Cornell Hotel and Restaurant Administration Quarterly*

Stanley W. Davis, Director of Master of Professional Studies Program

Cheryl S. Farrell, Director of Admissions

Harry R. Keller, Director of Alumni Affairs

Anita E. Miller, Registrar

Malcolm A. Noden, Director of Financial Aid

John F. Tewey, Director of Placement

Degree Program

	Degree	*HEGIS Code*
Hotel and Restaurant Administration	B.S.	0508

Facilities

Statler Hall is a unique educational building designed expressly to meet the needs of the faculty and students of the School of Hotel Administration. The building has three parts: a classroom section, a practice inn, and an auditorium with full stage facilities. The classroom section, a substantial five-story building with more than 115,000 square feet of space, is supplemented by office, classroom, and laboratory space in the Alice Statler Auditorium wing. For instruction and research, these two sections provide lecture rooms, auditoriums, laboratories, and offices.

The Howard B. Meek Library provides an extensive collection of publications, numbering over 18,000 volumes, on hotel and restaurant operation and related subjects. The library has received many gifts of display materials and personal collections — among them the 1,600 books of the Herndon Collection that includes many rare items.

Statler Inn, the School's practice laboratory, contains 52 guest rooms, including two suites, a fully equipped front office, and appropriate lounge areas. The Inn also has a variety of restaurants seating a total of 1,000 people: a formal dining room for 200, five private dining rooms for 8 to 100, two self-service restaurants for 150 and 200, a cocktail lounge, and a ballroom for 400.

The Inn's facilities constitute a realistic laboratory for student instruction in operational procedures and managerial responsibilities for the hospitality industry. The School offers its students both theoretical and practical instruction through the use of Statler Inn.

Curriculum

The School of Hotel Administration offers training in the numerous disciplines required for modern management, including accounting, finance, marketing, operations, and human resources development. The School's graduates hold executive positions in a variety of industries, but are especially well represented in the management of hospitality-related enterprises, including the lodging, food service, and travel industries.

Students are encouraged to pursue a broad range of courses, including those in the humanities, as preparation for assuming their places in the business community. Included in the basic curriculum are courses in financial management, food and beverage operations, administration, and physical plant management. Students receive firsthand training through the operation of the Statler Inn.

To satisfy degree requirements, every undergraduate enrolled in the School of Hotel Administration must complete a minimum of two summer periods of ten weeks each or their equivalent of full-time, supervised employment and file acceptable reports for each work period.

The basic program leading to the degree in hotel administration, as set forth below, can be further enriched with a broad selection of elective courses offered by the School and elsewhere in the University. For instance, the student wishing to specialize in financial management, in food or beverage management, and in any other area will find an extensive list of elective courses offered within the School and a suggested list of courses offered by other University divisions in *Cornell University: Description of Courses*.

The School's programs for advanced degrees include those of Master of Professional Studies, Master of Science, and Doctor of Philosophy. For more complete information about undergraduate program requirements, see the *Announcement of the School of Hotel Administration*. For further information on graduate degree programs, the reader should consult the *Announcement of the Graduate School* or contact Professor Stanley W. Davis, Director of the Master of Professional Studies Program.

Requirements for Graduation

Regularly enrolled students in the School of Hotel Administration are candidates for the degree of Bachelor of Science. The requirements follow:

1) Completion of eight terms in residence.*
2) Completion, with a minimum average of 2.0, of 122 credit hours, required and elective, as set forth in the table below.
3) Completion of two units of practice credit before entering the last term of residence, as defined below.
4) Completion of the University physical education requirement during the first two terms of residence.

Suggested programs of courses arranged by years also appear on the following pages. The required courses specifically indicated account for 88 of the total of 122 hours. From the hotel electives, some combination of courses totaling at least 16 credits is to be taken. The remaining 18 credits may be earned in courses chosen at will from the offerings of any college of the University provided only that the customary requirements for admission to the courses chosen are met.

Students in the School of Hotel Administration who plan to attend summer school at Cornell or elsewhere or who propose to attend any other university, with the expectation that the credit earned may be counted toward the Cornell degree in hotel administration, must obtain the approval of the School in advance. Without advance approval, such credit will not count toward the degree.

Credit earned in the courses in military science, air science, or naval science may be counted in the 18 credit group of free electives. Both men and women students are required by the University Faculty to take two courses in physical education, but no credit toward the academic degree is allowed for these courses.

Grading System

Letter grades ranging from A+ to F are given to indicate academic performance in each course. These letter grades are assigned a numerical weight for each term average as follows: A equivalent to 4.0; B to 3.0; C to 2.0; D to 1.0; F to 0.0. For good standing, the student should maintain a minimum average of 2.0. In order to graduate, a cumulative average of 2.0 and a final term average of 2.0 are required as minimums. Of the *free* elective courses for which a student may be enrolled in a given term, a maximum of four credits may be on a "satisfactory-unsatisfactory" basis. This provision is exclusive of any hotel administration courses offered only on an S-U basis such as H Adm 101 and 102.

Students whose term average is at least 3.3 and composed of at least twelve credit hours of letter grades, with no unsatisfactory or incomplete grades, are honored by being placed on the Dean's List.

*Students transferring from other colleges and universities may be allowed appropriate credit against the residence requirements at the time of admission. In addition, in individual exceptional cases, the faculty may elect to modify the residence requirement.

Practice Requirement

As part of degree requirements, each undergraduate enrolled in the School of Hotel Administration must complete a minimum of two summer periods of ten weeks each of full-time, supervised employment and file acceptable reports for each work period.† This requirement may also be satisfied by completing one such summer work period and sufficient part-time work to equal ten full-time work weeks. Again, acceptable reports must be filed. Students entering the School who have had extensive work experience may satisfy one-half of the work experience requirement if they make application for approval to the Practice Credit Committee at the time of matriculation and submit an acceptable report during the first term following matriculation by the stated deadline. Students are not permitted to register for the final term of residence until they have satisfied the practice requirement in full.

The requirement has a number of objectives. Students can test their interest in work in the field. They can learn by experience the points of view of the employee and by observation the duties of fellow workers in related jobs, in superior and inferior posts. With thought and imagination they can reflect upon and learn something of the problems of management and their solution. Upon returning to the classroom, students can draw upon this experience to illustrate and to understand the ideas developed by the instructor. After graduation, they can rest their application for permanent employment in part upon the practice experience record and in many cases are assisted by contacts established during the practice period.

Since cadets in the Army Reserve Officers Training Corps are expected to spend six weeks in camp during the summer before their senior year, it is especially desirable that hotel students who plan to join the Corps and to elect the advanced courses in military science make every effort to expedite their practice work early. Similarly, students enrolled in the Navy Reserve Officers Training Corps who must make summer cruises should anticipate the practice requirements as much as possible.

Although the practice requirement is an essential part of the student's program, the School does not guarantee summer positions. Through the School's numerous contacts with the hotel and restaurant industry a considerable number of openings are available for students of high promise. Other students are assisted in finding work, and ordinarily American students find jobs quite readily. Jobs suitable for foreign students are considerably less numerous. Consequently, the foreign student must expect to have more difficulty in getting a position. The School will give what assistance it can to foreign students, but it cannot guarantee placement or assume responsibility for it.

Many of the major hotel and restaurant organizations provide special opportunities for Cornell students to gain wide-ranging experience through unique apprenticeship arrangements.

A limited number of upperclass students are encouraged to enroll in work-study programs which entail six to eight months of on-the-job managerial instruction and experience. For the details of these programs, see Directed Study, on the following pages.

†As set forth in the Practice Instruction Handbook, supplied on request to the School of Hotel Administration.

Course Requirements for Graduation

Specifically required courses	*Credits*
Administration and general studies: H Adm 101	1
Human resources management: H Adm 111, 211	6
Accounting and financial management: H Adm 121, 122, 125, 221, 222, plus three additional credits	18
Food and beverage management: H Adm 131, 132, 231, 232	12
Law: H Adm 341, 344	6
Properties management: H Adm 251, 351, 352, 451	12
Communication: H Adm 165, 265	6
Science and technology: H Adm 171, 172, 173, 174	12
Economics, marketing, and tourism: H Adm 281, 282, plus three additional credits	9
Liberal arts elective	6
Total specifically required hours	88
Hotel electives	16
Free electives	18
Total credits required for graduation	**122**

Undergraduate Program of Study

This typical arrangement of courses, year by year, is offered for illustration. The courses mentioned are described in detail in *Cornell University: Description of Courses.*

Freshman Year

Typically, a freshman schedule will consist of 16 to 18 credits each semester, selected from the following courses.

Specifically required courses	*Credits*
Report writing, H Adm 165	3
Introductory Psychology, H Adm 111	3
Orientation, H Adm 101	1
Information Systems I, H Adm 174	3
Financial Accounting, H Adm 121	3
Hospitality Accounting Systems, H Adm 122	3
Finance, H Adm 125	3
Fundamentals of Managing Service, H Adm 131	3
Commercial Food Service Preparation, H Adm 132	3
Food Chemistry I and II, H Adm 171–172	7
Sanitation in the Food Service Operation, H Adm 173	2
	34

*Suggested electives**	*Credits*
Lectures in Hotel Management, H Adm 102	1
Typewriting, H Adm 161	2

Sophomore Year

Specifically required courses	*Credits*
Management of Human Resources, H Adm 211	3
Intermediate Accounting, H Adm 221	3
Managerial Accounting in the Hospitality Industry, H Adm 222	3
Meat Science and Management, H Adm 231	3
Operational Food Production Systems, H Adm 232	3
Macroeconomics, H Adm 241	3
Microeconomics, H Adm 242	3
Property Management Graphics, H Adm 251	3
Effective Communication, H Adm 265	3
	27

Suggested electives	*Credits*
Hotel Computing Applications, H Adm 274	3
Front Office Machine Accounting, H Adm 223	1
Food and Beverage Control, H Adm 224	2
Principles of Marketing, H Adm 283	2
Report Typing, H Adm 261	2

Junior Year

Specifically required courses	*Credits*
Financial Management course	3
Law of Business, H Adm 341	3
Law of Innkeeping, H Adm 344	3
Mechanical and Electrical Systems I and II, H Adm 351-352	6
	15

Suggested electives	*Credits*
Resort and Condominium Management, H Adm 205	3
Rooms Division Management—Housekeeping, H Adm 305	2
Rooms Division Management—Front Office/Reservations, H Adm 304	2
Marketing Management, H Adm 216	3
Psychology in Business and Industry, H Adm 382	3
Seminar in Organizational Behavior and Administration, H Adm 315	3
Advertising and Public Relations, H Adm 381	2
The Psychology of Advertising, H Adm 483	2
Investment Management, H Adm 322	2
Financial Analysis and Planning, H Adm 323	3
Introduction to Statistical Analysis and Inference, H Adm 326	3
Seminar in Convenience Foods, H Adm 331	2
Franchising in the Hospitality Industry, H Adm 204	2
Tourism, H Adm 284	3
Law of Business II, H Adm 342	3
General Survey of Real Estate, H Adm 306	2
Development of a Hospitality Property, H Adm 301	3
Introductory Food Facilities Engineering, H Adm 353	3
Auditing, Business and Public Administration NBA 505	3

* Sixteen credits of hotel electives are to be taken.

Senior Year

Specifically required courses	*Credits*
An economics elective*	3
Physical Plant Planning and Construction, H Adm 451	3
	6

Suggested electives	*Credits*
Cases in Hospitality Marketing, H Adm 382	2
Union-Management Relations in Private Industry, H Adm 311	3
Development of Training Programs, H Adm 313	3
Principles of Management, H Adm 401	2
Hotel Sales, H Adm 482	2
Integrated Case Studies in the Hospitality Industry, H Adm 406	2
Work-Study Program, H Adm 601–602	†
Internal Control in Hotels, H Adm 421	2
Undergraduate Independent Research in Human Resources Management, H Adm 610	†
Undergraduate Independent Research in Financial Management, H Adm 620	†
Hospital Food Service Administration, H Adm 234	2
Restaurant and Beverage Management, H Adm 333	3
Purchasing, H Adm 338	2
Undergraduate Independent Research in Food and Beverage Management, H Adm 630	†
Undergraduate Independent Research in Law, H Adm 640	†
Food Facilities Equipment, Layout, and Design, H Adm 354	3
Seminar in Interior Design, H Adm 452	3
Seminar in Environmental Control, H Adm 453	3
Seminar in Hotel Planning, H Adm 454	4
Seminar in Restaurant Planning, H Adm 455	3
Seminar in Destination Resort Planning, H Adm 456	3
Undergraduate Independent Research in Properties Management, H Adm 650	†
Managerial Letter Writing, H Adm 364	2
Undergraduate Independent Research in Managerial Communications, H Adm 660	†
Undergraduate Independent Research in Science and Technology, H Adm 670	†
Undergraduate Independent Research in Economics, Marketing, and Tourism, H Adm 680	†

Programs in Special Areas

While completing the required courses leading to the bachelor's degree, undergraduates in the School have the option of concentrating their studies in a major area of instruction. These include administration, financial management, food and beverage management, hotel-motel planning and design, management, marketing, and food service science, among others.

When the student selects one of these major fields of concentration, he or she should consult the coordinator of instruction in that area during the sophomore year to plan the sequence of elective courses and directed studies that will best fit his or her program.

A list of elective courses offered in the School's special areas of instruction is provided below.

Undergraduate Elective Courses in Hotel Administration

Administration and General Studies	*Credits*
Lectures in Hotel Management, H Adm 102	1
Principles of Management, H Adm 201	3
Club Management, H Adm 203	2
Franchising in the Hospitality Industry, H Adm 204	2
Resort and Condominium Management, H Adm 205	3
General Insurance, H Adm 206	3
Development of a Hospitality Property, H Adm 301	3
Seminar in Hotel Operations, H Adm 302	2
Club Management Seminar, H Adm 303	1
Rooms Division Management—Front Office/Reservations, H Adm 304	2
Rooms Division Management—Housekeeping, H Adm 305	2
General Survey of Real Estate, H Adm 306	2
Hotel Security and Crime Prevention, H Adm 307	2
Seminar in Management Principles, H Adm 401	2
Hotel Management Seminar, H Adm 402	1
The Small Business, H Adm 403	3
Management Organization of the Small Business, H Adm 404	3
Seminar in Real Estate, H Adm 405	2
Integrated Case Studies in the Hospitality Industry, H Adm 406	3
T. A. Training in Administration and General Studies, H Adm 409	1–3
Undergraduate Independent Research in Administration and General Studies, H Adm 600	1–3
Work Study Program I, H Adm 601	6
Work Study Program II, H Adm 602	6

Human Resources Management	*Credits*
Union-Management Relations, H Adm 311	3
Development of Training Programs, H Adm 313	3
Psychology in Business and Industry, H Adm 314	3
Seminar in Organizational Behavior and Administration, H Adm 315	3
Special Studies in the Management of Human Resources, H Adm 416	3
T. A. Training in Human Resources Management, H Adm 419	1–3
Undergraduate Independent Research in Human Resources Management, H Adm 610	1–3

*The requirement in economics may be satisfied by a minimum of three credits in any course in economics beyond Hotel Administration 281, 282, or by such courses as 283, 306, 311, 322, 323, 347, 348, 382, 405. See also suggested courses in economics in other divisions below.

†With the exception of the Work-Study Program, only the first three credits of independent study in any area may be counted toward hotel electives. The rest will be credited against free electives.

Accounting and Financial Management	*Credits*
Front Office Machine Accounting, H Adm 223	1
Food and Beverage Control, H Adm 224	2
Hotel Management Contracts, H Adm 321	1
Investment Management, H Adm 322	2
Financial Analysis and Planning, H Adm 323	3
Financial Charts and Graphs, H Adm 324	1
Introduction to Statistical Analysis and Inference, H Adm 326	3
Cost Accounting, H Adm 328	3
Internal Control in Hotels, H Adm 421	2
Taxation: Personal and Corporate, H Adm 422	2
T. A. Training in Accounting and Financial Management, H Adm 429	1–3
Undergraduate Independent Research in Accounting and Financial Management, H Adm 620	1–3

Food and Beverage Management	*Credits*
Specialty Food Preparation, H Adm 233	3
Hospital Food Service Administration, H Adm 234	2
Seminar in Convenience Foods, H Adm 331	2
Corporate Restaurant Management, H Adm 333	3
Beverage and Entertainment Management, H Adm 334	4
Survey of Beverages, H Adm 337	2
Purchasing, H Adm 338	2
Buffet Planning and Preparation, H Adm 339	3
T. A. Training in Food and Beverage Management, H Adm 439	1–3
Undergraduate Independent Research in Food and Beverage Management, H Adm 630	1–3

Law	*Credits*
Law and the Woman Employee, H Adm 247	3
Law of Business II, H Adm 342	3
Law of Real Estate I, H Adm 347	2
Law of Real Estate II, H Adm 348	2
T. A. Training in Law, H Adm 449	1–3
Undergraduate Independent Research in Law, H Adm 640	1–3

Properties Management	*Credits*
Principles of Design, H Adm 255	3
Introductory Food Facilities Engineering, H Adm 353	3
Food Facilities Engineering Layout and Design, H Adm 354	3
Seminar in Interior Design, H Adm 452	3
Seminar in Environmental Control, H Adm 453	3
Seminar in Hotel Planning, H Adm 454	3
Seminar in Restaurant Planning, H Adm 455	3
T. A. Training in Properties Management, H Adm 459	1–3
Undergraduate Independent Research in Properties Management, H Adm 650	1–3

Communication	*Credits*
Typewriting, H Adm 161	2
Report Typing, H Adm 261	2
Typewriting and Business Procedures, H Adm 262	3
Shorthand Theory, H Adm 263	3
Written Communication, H Adm 268	1
Managerial Letter Writing and Dictating, H Adm 364	2
T. A. Training in Communication, H Adm 469	1–3
Undergraduate Independent Research in Communication, H Adm 660	1–3

Science and Technology	*Credits*
Hotel Computer Applications, H Adm 274	3
Advanced Programming and Systems Design, H Adm 374	3
T. A. Training in Science and Technology, H Adm 479	1–3
Undergraduate Independent Research in Science and Technology, H Adm 670	1–3

Economics, Marketing, and Tourism	*Credits*
Principles of Marketing, H Adm 283	2
Tourism, H Adm 284	3
Advertising and Public Relations, H Adm 381	2
Cases in Hospitality Marketing, H Adm 382	2
Seminar in Selected Topics of Hospitality Marketing, H Adm 383	2
Seminar in Advertising and Public Relations, H Adm 481	2
Hotel Sales, H Adm 482	2
The Psychology of Advertising, H Adm 482	3
T. A. Training in Economics, Marketing, and Tourism, H Adm 489	1–3
Undergraduate Independent Research in Economics, Marketing, and Tourism, H Adm 600	1–3

Foreign Languages

Mastery of a foreign language is particularly desirable for the hotelman or restaurateur. Foreign language study at Cornell is characterized by small classes, emphasis on the spoken language, and use of playback equipment.

The first six credit hours of a modern foreign language taken at Cornell University may be counted as hotel electives rather than as free electives. For further information on foreign language study at Cornell, the student should consult *Cornell University: Description of Courses.*

Graduate Curriculum

Persons holding the B.S. degree in hotel administration from Cornell University who are candidates for the M.S. or Ph.D. degree should refer to the admissions and degree requirements set forth in the *Announcement of the Graduate School.* The student's program is developed with the aid and direction of a Special Committee, chosen by the student from members of the graduate faculty, and this committee also approves the thesis.

Candidates for the Master of Professional Studies degree pursue one of three tracks in their graduate studies, according to the areas previously studied. Students whose undergraduate degrees are in an area other than hotel administration follow Track I, for which the required two-year program is set forth below.

The curricula for M.P.S. Tracks II and III are specifically designed for each student, based on previous experience and career goals. Students qualifying for Track II (those who hold B.S. degrees in hotel administration from an institution other than Cornell) are expected to have taken the courses required for Track I as part of their undergraduate work.

If they have not done so, these courses should be part of their graduate program. A minimum of three residence units is required to complete Track II. Track III is for students who hold a B.S. in hotel administration from Cornell, and normally requires only one year to complete.

Students entering Tracks II and III should meet with the graduate faculty representative soon after their arrival to select a graduate adviser.

Cornell University: Description of Courses includes courses planned for graduate study from which the candidate and a graduate adviser can develop a concentration of studies in one or more areas of special interest.

Each student also writes an investigative report, under the guidance of an adviser, to meet requirements for the M.P.S. degree.This report should preferably deal with the student's area of concentration.

Required Program for M.P.S. Track I Students

Specifically required courses	*Credits*
Sanitation in the Food Service Operation, H Adm 173	2
Graduate Managerial Accounting in the Hospitality Industry, H Adm 722	3
Law of Innkeeping, H Adm 744	3
Seminar in Marketing, H Adm 781	3
Computers and Hotel Computing Applications, H Adm 774	3
Graduate Corporate Finance, H Adm 723	4
Graduate Food and Beverage Management, H Adm 731	3
Graduate Operational Food Production Systems, H Adm 732	3
Graduate Studies in Project Development and Construction, H Adm 751	3
Graduate Studies in Electrical and Mechanical Systems, H Adm 752	3
Graduate Food Chemistry, H Adm 771	4
Monograph Research, H Adm 800	3
Monograph, H Adm 801	2
Total, specifically required courses	39
Elective courses	25
Total credits required for M.P.S. Track 1 students	**64**

Directed Studies

Independent Research

Students may conduct independent research projects in any academic department of the School under the direction of a faculty member. Credit is arranged on an individual basis. Only the first three credits of directed study may be credited against hotel electives during the undergraduate years. Additional directed study is credited against free electives, with the exception of the work-study program of 12 credits. To enroll in an independent research project, students must obtain written permission from the School office prior to course registration.

Directed Study

Work-Study Program. This program is open only to upperclass and graduate students. Students accepted into the program earn twelve credits. Students enrolled in this program have an opportunity to combine managerial instruction with on-the-job management experience. Application for admission should be made one semester in advance. Instruction is provided by the School's faculty and by the organization participating in the work-study arrangements. Work-study programs are currently in operation at several locations, including the Statler Inn on the University campus. Students receive both academic credit and practice credit, and appropriate financial remuneration for the period of the program. The student is charged three-fourths of full tuition. Inquiries regarding the program should be addressed to Mr. Normand L. Peckenpaugh, Work-Study Coordinator, Statler Hall.

Faculty

Robert A. Beck, Ph.D., E. M. Statler Professor; Dean of the School
Raymond M. Cantwell, M.S., Associate Professor
Robert M. Chase, M.B.A., Associate Professor
Vance A. Christian, M.S., Professor
John J. Clark, Jr., Ph.D., Associate Professor
Antoinette L. Colucci, M.S., Assistant Professor
Richard A. Compton, M.S., Senior Lecturer
Betty B. David, Teaching Support Staff
Stanley W. Davis, Ph.D., Professor
Donal A. Dermody, M.S., Associate Professor
Regina M. Dioguardi, B.S., Lecturer
David C. Dunn, Ph.D., Associate Professor
Joseph F. Durocher, M.P.S., Lecturer
James J. Eyster, Ph.D., Associate Professor
W. Robert Farnsworth, M.A., Lecturer
Dennis H. Ferguson, B.S., Research Associate
Dora G. Flash, A.B., Lecturer
Paul L. Gaurnier, M.S., Professor
A. Neal Geller, Ph.D., Associate Professor
H. Victor Grohmann, B.S., H. B. Meek Visiting Professor
Willa F. Grunes, Ph.D., Associate Professor
Francine A. Herman, M.S., Associate Professor
Daphne A. Jameson, Ph.D., Assistant Professor
William H. Kaven, Ph.D., Associate Professor
Marian M. Kreithan, B.A., Lecturer
Keith McNeill, B.S., Lecturer
Richard G. Moore, M.E.E., M.B.A., Senior Research Associate
Stephen A. Mutkoski, Ph.D., Assistant Professor
Malcolm A. Noden, Research Associate
Richard H. Penner, M.S.Arch., Assistant Professor
Peter Rainsford, Ph.D., Assistant Professor
Michael H. Redlin, Ph.D., Assistant Professor
Bonnie S. Richmond, M.S., Lecturer
John C. Ross, B.S., Lecturer
David Sher, M.B.A., Associate Professor
John E. H. Sherry, J. D., Associate Professor
John H. Sherry, LL.B., Professor

Mary A. Tabacchi, Ph.D., Assistant Professor
John F. Tewey, M.S., Lecturer; Placement Officer
James C. White, Ph.D., Professor
Donald E. Whitehead, B.S., Lecturer
Peter C. Yesawich, Ph.D., Visiting Lecturer

New York State College of Human Ecology

Administration

Jerome M. Ziegler, Dean
Bertha A. Lewis, Associate Dean for Research and Graduate Education; Assistant Director of the Cornell University Agricultural Experiment Station
Lucinda A. Noble, Associate Dean; Acting Director of Cooperative Extension
William H. Gauger, Assistant Dean for Undergraduate Education
Barbara Morse, Chairperson of the Division of Academic Services
Clarence H. Reed, Director of Special Educational Projects
Timothy K. Stanton, Director of Field Study Office
Joyce McAllister, Registrar

Degree Programs

	Degree	*HEGIS Code*
Community Service Education	B.S.	2101
Consumer Economics and Housing	B.S.	1304
Design and Environmental Analysis	B.S.	0201
Human Development and Family Studies	B.S.	1305
Nutritional Sciences	B.S.	1306
Social Planning and Public Policy	B.S.	2199

Facilities

The College of Human Ecology is housed in Martha Van Rensselaer Hall. The Division of Nutritional Sciences, an intercollege division supported jointly by this College and the College of Agriculture and Life Sciences, has space in Savage Hall and in Van Rensselaer Hall.

The physical plant includes administrative offices, faculty offices, classrooms, auditoriums, and lecture halls; wet chemistry and biochemistry laboratories for nutrition, food science, and textile science; household equipment laboratories; experimental food laboratories; design studios; woodworking shops; a children's creative art laboratory; experimental observation rooms with one-way vision screens and sound-recording equipment; educational television studios and a printing and reproduction facility. Also included are learning resource centers (human development and family studies, home economics education, interior and product design, nutritional sciences), a historical costume collection, a human metabolic research unit, research animal facility, cold rooms, a constant temperature and humidity laboratory, an experimental nursery school, and a home management apartment.

Specialized equipment for teaching and research includes biochemical and chemical instruments for spectroscopy, chromatography, radioisotope analysis, electrophoresis, microscopy and ultracentrifugation, physical testing equipment such as an Instron, and cameras, videotape, and sound-recording equipment.

Planning a Program of Study

Early in their college careers, many students are not sure of their long-range goals. Because exploration is important in a college education and because we know that interests may change as new options and goals emerge, the College provides students with opportunities to alter their plans.

Students should have a plan, however tentative, to ensure that their course selection is not random. Fulfilling course prerequisites or distribution requirements is often easier if some plan has been made.

Some requirements are common to a number of majors and options in human ecology. In the natural sciences, for example, nine of the seventeen options require chemistry, while seven options require biology. Seven options require both chemistry and biology; one requires chemistry and physics.

In the social sciences, economics is required by most of the majors and options. Psychology and sociology are either required or are alternate requirements in all majors and options in the College. Students who take one or more of these subjects in their freshman or sophomore years will be better prepared for many options. Although economics, psychology, and sociology are requirements common to most options, there are differences in the specific courses that meet the requirements. Because of these differences, a student who takes a course specified for one option and who later changes to an option requiring a different course (for instance, CEH 148 instead of RSoc 100) can use the first course to fulfill *additional requirements* in the social sciences. Another alternative would be to petition to have the original course accepted in the new option.

In communication, analysis, and the humanities, the subject areas underlying a majority of the options are mathematics or statistics. CSE 292, Research Design and Analysis, is either a requirement or is an alternative requirement in some departments along with mathematics and statistics.

Academic Services counselors and departmental advisers are available to talk with students about common course requirements that can be filled before a decision about an option or major has been made. Advisers can also discuss the differences in requirements among the options.

Students have individual objectives in choosing courses beyond the minimum requirements of the major. The University is diverse; the departments, centers, and special programs numerous; and the fields of study almost unlimited. Academic Services counselors and departmental advisers can suggest courses that may particularly interest students and can explain where these courses are given in the University. Students can also use the index of the *Cornell University: Description of Courses* to discover where different subjects are offered.

Students should be aware that some courses at Cornell have overlapping subject matter. Two such courses are CEH 100 and Econ 101; both are courses in introductory macroeconomics, and students should take only one of these courses. In introductory psychology, students may take either Educ 110 or Psych 101. The same is true for the

ILR 210 course in statistics and AgEc 310; students may receive credit for one of these courses, but not both.

Students who studied a foreign language before coming to Cornell and who wish to continue must take either the CEEB achievement test in that language or a Cornell language placement test. The latter is given during orientation week in September and again in December, January, and May. Students in human ecology who plan to work with non-English-speaking people in this country or overseas often find it necessary to be proficient in another language.

Requirements for Graduation

To graduate students must:

1) meet College credit and distribution requirements,
2) complete requirements for a major,
3) have a cumulative average of 1.7 (C−) or better,
4) fulfill residency requirements,
5) fullfill the physical education requirement.

College Requirements

To receive the Bachelor of Science degree in human ecology from Cornell, a student must successfully complete courses totaling 120 credits, plus 2 or 4* credits of physical education. The credits must be distributed as follows:

These are the general areas of study and specific courses and credits required of every student in the College.

I. Natural and Social Sciences (24 credits)

A. *Natural Sciences* (6 credits) selected from BioS 101–103, 102–104, 102–208, 105–106, 109–110; Chem 103–104, 207–208, 215–216; or Phys 101–102, 112, 201, 207–208.

B. *Social Sciences* (6 credits) selected from economics (including CEH 100); psychology (including Educ 110, 311, 317); sociology (including rural sociology); or HDFS 115, 116, and 150. (Do not take Econ 101 *and* CEH 100; Psych 101 *and* Educ 110: they are equivalent.)

C. *Additional credits* (12 credits) selected from the subjects listed above or anthropology (except archaeology); astronomy (Astro 102); biochemistry; microbiology; genetics and development; geology (Geol 101); or government.

II. Communication, Analysis, and the Humanities (15 credits)

A. *Freshman Seminars* (6 credits)

B. *Additional credits* (9 credits) selected from art; communication arts; comparative literature; drawing; English; ancient or modern foreign languages; history; history of art; history of architecture; mathematics; music; philosophy; statistics; theatre arts; design and environmental analysis (DEA 101 or DEA 115); or CSE 292.

*Two credits are required for those students who matriculated fall 1978 or later; 4 for students who matriculated earlier.

III. Human Ecology (40 credits)

A. *Requirements for the major* (number of credits varies)

B. *Work in at least two departments* outside the major (15 credits) including at least 6 credits or two courses in one department outside the major.

IV. Additional Credits or Electives (41 credits)

A. *Courses in the state divisions* of Cornell (at least 20 credits): College of Agriculture and Life Sciences; College of Human Ecology; School of Industrial and Labor Relations; and College of Veterinary Medicine.

B. *Courses in the endowed divisions* of Cornell (no more than 21 credits): Africana Studies and Research Center; College of Art, Architecture, and Planning; College of Arts and Sciences; Graduate School of Business and Public Administration; College of Engineering; and the School of Hotel Administration.

V. Physical Education (2 or 4 credits)

Related Policies

- Sections I, II, and III: The required credits listed are the minimums; credit for courses taken in excess of those minimums counts toward the 41 credits required in Section IV.
- Sections I and II: Courses specified by the major to meet the requirements in these sections may be used either to meet these requirements or may be applied toward the additional credits in Section IV. (Courses not listed in Section I and II may also be used to meet the 41 credits required in Section IV.)
- Sections I, II, and III-B: Students are permitted to lack one credit in meeting the requirements for these sections. For example, you may have 14 instead of 15 credits of human ecology courses outside your major department, or you may have 23 instead of 24 credits of courses in the natural and social sciences, so long as the minimum total of 120 credits exclusive of physical education is met.
- Section IV-A: *There is no limit to the number of credits that you may take in the state divisions of Cornell* and therefore, both the total number of credits taken in Section IV and the total number of credits accumulated by graduation may exceed the minimums.
- Section IV-A and B: Elective credits earned in Cornell's endowed divisions during Summer Session, credits earned *in absentia,* and transfer credits are counted as credits earned in the state divisions and, therefore, do not count against the 21 credits allowed in the endowed divisions in meeting the requirements of this section.
- Section IV-B: Not more than 21 credits may be taken in the endowed divisions of the University unless all of the following conditions are met: (1) students must be in the final semester prior to graduation; (2) the credit taken must be in excess of the 120 academic credits required for graduation (i.e., if students wish to take 23 endowed credits in electives, then they must graduate with a total of 122 academic credits); (3) the student must pay per credit for each credit that is taken in excess of the 21 allowed. In 1978–79 the fee per credit will be $116.41. Courses taken to meet requirements in Sections I and II and within the limit of 21 credits in IV-B may be taken without charge except that credit for any course

given in an endowed division will, if the student fails, be counted toward the 21 endowed credits allowed under Section IV.

Interdepartmental courses for human ecology students may count toward the fifteen credits outside the major, but they must be in addition to the required work in two departments with at least six credits or two courses in one department. In some cases, these courses may be accepted by a department to fill a practicum or major requirement.

Transfer Students

Entering transfers who lack study in biology *and* chemistry *or* physics either at the high school or college level must make up this deficiency before registering for their third semester in the College.

- Section I-A: Transfers who have had biology and chemistry or physics in either high school or college and who are entering Human Ecology programs in interior and product design, consumer economics, housing, social planning, public policy, human development and family studies can satisfy the College of Human Ecology's natural science graduation requirements with any courses taken to meet their former institution's natural science requirements.
- Section IV-B: Credits for courses transferred to this section *do not* count against the 21 Cornell endowed credits allowed.
- Section V: Effective fall 1978, transfer students who have had the equivalent of two semesters of college (and therefore enter as sophomores) are not required to take physical education at Cornell, even if they did not take physical education at their first college. Students 22 years of age or older at the time of matriculation to Cornell may be exempted from physical education by the College Registrar. Exemption or postponement for medical reasons must be approved by Gannett Clinic. For further information about exempting or postponing the physical education requirement, consult the College Registrar, Joyce McAllister, in 146 Martha Van Rensselaer Hall.

Freshmen

The College recommends that entering students complete a unit of biology *and* a unit of chemistry *or* physics before they matriculate. Entering freshmen who lack a unit of biological or physical science must make up this deficiency before they register for their fourth semester. A semester-long college-level course in the appropriate science is considered as equivalent to a high school unit and counts as credit toward graduation requirements.

Section V: Students who enter Cornell as freshmen in 1978–79 fall term are required to take two semesters of physical education in the first two years.

Residency Requirements

All College curricula are planned to fit in an eight-semester program. A schedule of 15 credits (in addition to physical education) a semester is considered standard, and if pursued for eight semesters, provides the credit hours needed for graduation. If the student completes all the requirements — for major, for distribution, for total credits, and for cumulative average — in fewer than eight semesters, the degree may be conferred at the end of the semester in which the last requirements are met. Students who plan to receive their degrees early should notify the registrar at the beginning of the semester so that their summaries of record may be prepared and their names placed on the list of degree candidates.

Sometimes a student (particularly a transfer) may need an additional semester to complete a program. To register for a semester beyond the eighth, the student must submit a written request to the Assistant Dean of the College. The request should include the reasons for enrolling for the extra semester and a list of courses planned for that time. Such requests usually are granted when there appears to be no possible way for the student to complete the professional curriculum or the degree requirements without the extra semester.

Freshmen entering the College with 15 transfer credits have seven semesters in which to complete the degree. Transfer students must complete at least 60 credits at Cornell.

Mature students (those at least 24 years old at the time of matriculation) are not required to petition the Assistant Dean for approval to study beyond the usual eight semesters.

For information about study *in absentia*, leave of absence, or withdrawal from the College, see appropriate sections.

Procedures

Course Enrollment

Students are expected to complete course enrollment during the designated period of time each semester. Failure to do so carries a $10 penalty, which can be waived only if circumstances are completely beyond your control. It is the student's responsibility to find out the dates of course enrollment.

Before or during course enrollment, students should talk to a department adviser or a counselor in Academic Services about their program plans. Lists of courses offered by the College are issued by the Office of Records and Scheduling before the start of course enrollment, and the *Course and Time Roster* is issued by the University Registrar. Last-minute course changes are posted in the Office of Records and Scheduling as well as in Academic Services (N101 Martha Van Rensselaer Hall).

Since new students starting at mid-year do not have an opportunity to enroll in courses until after they arrive on campus and have had University registration, the College tries to reserve places for them in Human Ecology courses. New students arriving at midyear usually enroll in Human Ecology courses on Thursday afternoon after completing their University registration that morning. For the next three weeks, they have an opportunity to add courses in other divisions of the University.

Freshman and transfer students registering for the first time in the University in the fall enroll in their courses during the preceding summer.

Continuing students enroll for fall courses in the preceding March or April; for spring semester, in October or November. Course enrollment materials are placed in student mail folders in the student lounge. Students are also notified by posters and notices in the *Cornell Daily Sun*. Additional course enrollment materials are available from Academic Services and must be completed and filed in the Records and Scheduling Office by the announced deadline.

Certain courses listed in *Cornell University: Description of Courses* may only be taken with *permission of the instructor.* This must be obtained before the student enrolls in the course. After receiving permission, the instructor should initial the green registration schedule or sign a white permission card, which can be obtained from the Office of Records and Scheduling. These cards should then be stapled to the green schedule.

Students interested in taking a course in the Art Department in the College of Architecture, Art and Planning are required to register with the Art Department secretary before enrolling in the course. Seniors wishing to take an elective course in Business and Public Administration are required to obtain permission of the instructor on a course authorization form that the student then files with the Registrar in 312 Malott Hall.

Each department in the College offers *special studies courses* that provide an opportunity for students to do independent work not available in regular courses. One of these, 300, Special Studies for Undergraduates, is intended primarily for students who have transferred from another institution and need to make up certain material.

The other special studies courses are 400, Directed Readings, 401, Empirical Research, and 402, Supervised Fieldwork. These are normally taken by upperclass students, whose work is supervised on an individual basis by a faculty member in the department in which the course is offered. It is important to enroll in the appropriate course number (300, 400, 401, or 402) for the special project.

Students who wish to take a special studies course must talk with the faculty member under whose supervision the study would be done and then prepare a plan of work. If the faculty member agrees to supervise the study, a multicopy description of the study to be pursued must be filled out. The signatures of instructor and the department chairman should be on the form before it is taken to the Office of Records and Scheduling. Forms and instructions are available in the Division of Academic Services.

To register in a special studies course taught in a department outside the College, students should follow the procedures established for that department.

The normal course load in the College ranges from 12 to 18 credits. No student may enroll in more than 15 credits or five courses without special permission from the Assistant Dean. However, credits beyond 15 may be added during the change-of-registration period at the beginning of the semester.

Avoid planning excessive work loads; the time required to keep abreast of courses tends to increase as the semester progresses. Courses cannot be dropped after the seventh week of classes without petitioning, so try to avoid the need to drop courses.

Except for mature students, a student may not carry fewer than 12 credits (exclusive of physical education) without permission from the Assistant Dean of the College. Forms for petitioning and advice on how to proceed are available from the Divison of Academic Services.

Students who petition before the beginning of the term to carry less than 12 credits may be eligible for proration of tuition. To apply for proration, obtain a form from the Bursar's Office in Day Hall or from the Office of Records and Scheduling. After the Assistant Dean has approved the reduced course load, the form should be signed by the College Registrar and returned to the Bursar's Office.

Mature students may carry 6 to 12 hours without petitioning. However, they still must have the College Registrar sign the form for proration of tuition and fees and return the form to the Bursar's Office in Day Hall.

Oversubscribed Courses

Enrollment in many Human Ecology courses is limited. When a course is over-enrolled students are generally assigned on the basis of seniority. Professional goals also may be considered. Those not admitted to a course may be placed on a waiting list and will find a note to that effect attached to the course enrollment printout.

Late Course Enrollment

Students who fail to enroll in courses by the deadline normally must wait until the beginning of the semester to enroll and must pay a $10 fee. Extensions are sometimes granted if requested from the College Registrar before the end of course enrollment. Students who fail to meet the deadline for any reason should see a counselor in the Division of Academic Services as early as possible. In some cases, if the delay was absolutely unavoidable, the student may be allowed to enroll in courses late, and it is sometimes possible to have the fee waived. Waiving of the fee must be handled through the College Registrar. A counselor can advise students about course enrollment under these circumstances.

Course Enrollment Changes

Period of Change of Enrollment. During the first three weeks of each term, courses may be added or dropped without charge. A student's total course load may be increased to more than 15 credits at this time without petitioning. After the third week of the term a student may change a course only with the permission of the instructor and the payment of a $10 late fee. Instructors have the right to consider students' requests for course changes on an individual basis or to announce at the beginning of the term a specific date between the third and seventh weeks beyond which he or she will no longer approve course changes.

Since changes from the third through the seventh week of the term require payment of a $10 fee and permission of instructor and because after the seventh week you must petition the Assistant Dean to make a change, students should assess their work load carefully at the beginning of the term.

Procedures for making course changes during the change-of-enrollment period are listed below.

1) From the Office of Records and Scheduling or from the Division of Academic Services, obtain an optical mark Add/Drop/Change form for each course to be cancelled or added.
2) Fill the forms out and take them to the appropriate office to be signed; for Human Ecology courses, the forms should be taken to the Office of Records and Scheduling; for courses outside the College, the forms should be taken to the departmental offices.
3) Students should ask the person handling the class lists to add their names to the list of enrolled students for courses they are adding or to remove names from the

class list for courses to be dropped and to sign the appropriate Add/Drop/Change form.

4) *Turn all signed forms in to the Office of Records and Scheduling.* Your enrollment cannot be officially changed until the signed forms are filed in that office. For example, if you fail to "cancel" a course you are no longer attending, you are in danger of receiving an F or an NA [Not Attending] in the course because you are still officially enrolled. There is no charge for changes at this time.

A student who wishes to have his or her name placed on a waiting list for a Human Ecology course should be aware that such lists are compiled during the change-of-enrollment period on a first-come, first-served basis, without regard for seniority or other factors. *Students must check their status on the waiting list every 48 hours and, if space has not opened up, request that your name be kept on the list. Names not updated will automatically be dropped from the list.*

Students who are enrolled in a Human Ecology course with a limited enrollment who have not attended the first two class sessions will be dropped from the course unless circumstances that have prevented them from attending class have been discussed with the instructor.

After the Period of Change of Course Enrollment. From the third week through the seventh week of the term students should follow the procedure outlined above for changes made during the first three weeks of the semester, but must pay a $10 fee.

After the seventh week of classes, a student may not make course changes without petitioning the Assistant Dean of the College for approval. A petition is usually approved only when the circumstances prompting the change were beyond the student's control — for example, illness. If the petition is made on the basis of health, supportive medical evidence should be attached to the petition. Students should realize that they are expected to attend classes and complete assigned work until the petition has been formally approved.

Study *in Absentia*

Under certain conditions, credit toward a Cornell degree may be given for study *in absentia* at another accredited institution after matriculation in the College of Human Ecology. To be eligible for credit for such study, a student must be in good academic standing and must receive permission in advance from the College Registrar. Students not in good standing may study *in absentia* but will not receive transcript credit until they return to good standing. (Petition forms for this purpose are available in the Division of Academic Services.) Credit may be granted for study *in absentia after* the work has been done, but there is no guarantee that such credit will be awarded without advance permission.

Up to 15 credits may be taken *in absentia* as long as the work done does not duplicate courses already taken and the study is applicable to the requirements of the College. More than 15 credits of work *in absentia* may be allowed under the following conditions: (1) the work taken represents a special educational opportunity not available at Cornell, (2) it relates to the student's particular professional goals, and (3) that goal is consistent with the focus of the College. To take more than 15 credits *in absentia,* students must petition the Assistant Dean, who will evaluate the proposed program. (Forms are available in N101 Martha Van Rensselaer Hall.)

If part of the work for which credit is sought is to be applied to requirements of the major, the petition will be sent to the appropriate department for approval. If credit is sought for work to be done in a modern foreign language that the student has already studied, approval of the Department of Modern Languages and Linguistics (College of Arts and Sciences) must be obtained.

Students are responsible for having the registrar of the institution where they study *in absentia* send transcripts of grades to the Office of Records and Scheduling at the College of Human Ecology. Credit can then be officially assessed and applied to the Cornell degree. Only credits (not course names and grades) for study *in absentia* appear on the Cornell University transcript.

A student who holds Regents or Children of Deceased or Disabled Veterans Scholarship may claim that scholarship for study *in absentia* if such study is done in a college in New York State and if it is for a maximum of 15 credits acceptable to the College of Human Ecology.

The rules regarding study *in absentia* apply to transfer students with the additional stipulation that at least 60 credits must be taken at Cornell. At least 40 of the 60 credits must be in the College of Human Ecology at Cornell unless the student has transferred equivalent human ecology credit. (No more than 20 credits of equivalent credit may be applied to the 40 credits required in Human Ecology.)

Leave of Absence or Withdrawal

Students may request leaves of absence before the beginning of the semester for which leave is desired or *during the first seven weeks of the semester.* A student may extend his or her leave for a second semester by making a written request to the Office of Records and Scheduling. Students who are contemplating a leave of absence or a withdrawal should discuss their plans with a counselor and if a decision is made to take a leave of absence or to withdraw, the appropriate forms should be obtained from a counselor. File the completed form with the Office of Records and Scheduling to make the leave or withdrawal official.

Requests for leaves of absence received after the first seven weeks of the semester or requests for a leave of absence from students who have already had two semesters' leave of absence will be referred for action to the Committee on Academic Status. The Committee may grant or deny such requests, attaching conditions as it deems necessary. Leaves of absence after the first seven weeks generally are granted only when there are compelling reasons for the student's inability to complete the semester, such as extended illness.

If a leave of absence is requested after the first seven weeks, students are advised to continue to attend classes until action is taken on their petitions. A student whose petition for a leave of absence is denied may choose to withdraw or to complete the semester.

The academic records of all students who are granted a leave of absence are subject to review, and the Committee on Academic Status may request grades and other information from faculty to determine whether the student should return under warning, severe warning, or in good academic standing.

Students who leave the College without an approved leave of absence or who do not return after their leave has expired will be given a withdrawal after the seventh week of the semester in which they failed to register. A withdrawal terminates status as students at the University. Students may voluntarily withdraw at any time by notifying the College Registrar.

Readmission

Students who have withdrawn from the College and who wish to reenter at a later date must apply for readmission. A request for readmission must be submitted to the Committee on Admissions and transcripts of college courses taken after withdrawal should be sent to the Human Ecology Admissions Office. It is not necessary to file a new application for admission, and no application fee is required. Students readmitted to the College are required to complete College and major credit requirements for graduation in effect at the time of readmission.

Mature Students

The College recognizes that students who interrupted their formal education and are returning to school have problems different from those of the average undergraduate. To facilitate the education of mature students, defined as those 24 years old or older at matriculation, the College has adopted certain procedures specifically for that group.

Mature students are permitted to enroll in as few as six credits without petitioning. At the beginning of each term, mature students planning to take a light course load should pick up a proration of tuition form from the College's Office of Records and Scheduling and return it completed to the Bursar's Office in Day Hall.

Mature students also are permitted to extend their residency beyond the normal eight terms. Mature students should contact Vivian Geller, Director of the Continuing Education Information Center located in the Dean of Students Office, 103 Barnes Hall, for information on services available through that office.

Exemptions

Students who want an exemption from a specific graduation requirement or major requirement may petition the Assistant Dean of the College, and approval may be given under certain circumstances. For example, transfer students may have problems scheduling courses to meet College distribution requirements, and the Assistant Dean may approve alternative courses. If the requirement for which the student seeks exemption is one specified by the major, the Assistant Dean will refer the petition to the department for consideration.

Petition forms are available in the Division of Academic Services, N101 Martha Van Rensselaer Hall.

Grades and Academic Standing

The official University grading system uses letter grades with +s and −s. Passing grades range from A+ to D−; F is failing. INC denotes incomplete, NA is given when a student registered for a course has not attended, and R is the grade given at the end of the first semester of a year-long course. The grades of NA, INC, and R do not have quality point equivalents attached. These are the quality point equivalents:

A+ = 4.3	B+ = 3.3	C+ = 2.3	D+ = 1.3
A = 4.0	B = 3.0	C = 2.0	D = 1.0
A− = 3.7	B− = 2.7	C− = 1.7	D− = 0.7
			F = 0.0

This is how a term average is computed:

Course	*Grade*	*Quality Points*		*Credits*		*Product*
Chem 103	B+	3.3		3		9.9
English 151	C−	1.7		3		5.1
DEA 145	B	3.0	×	4	=	12.0
CEH 100	B	3.0		3		9.0
DEA 111	C	2.0		3		6.0
Total				**16**		**42.0**

To arrive at the term average add the products (hours × quality points) and divide by the number of credit hours taken. Here 42 divided by 16 equals 2.63.

The cumulative average (an average of grades from two or more terms) equals the sum of the products of all the grades at Cornell divided by the total number of credits taken.

Final grades for the fall semester are given out at University registration in the spring; final grades for the spring semester are mailed to students from the Office of the University Registrar in Day Hall during the summer. Midterm grades are given in some courses and are placed in the student's mail folder toward the end of October for fall semester and around mid-March for spring semester. A course for which no midterm grade is given will be listed with the letters NMG. Students should check their midterm reports carefully to make certain that the official registration is accurate. Errors in the listing of courses must be brought to the attention of the Office of Records and Scheduling immediately so that facts may be verified and any corrections made.

S-U Grades

Some courses in the College and in other academic units at Cornell are offered on an S-U basis; that fact is indicated in the course description. University regulations concerning the S-U system require that a grade of S be given for work equivalent to a C− or better; for work below that level, a U must be given. No grade or quality point value is given for an S, and S-U grades are not included when semester or cumulative averages are computed. A course in which a student receives an S is, however, counted for credit. No credit is received for a U. Both the S and U grades appear on a student's record. A student who is attempting to qualify for the Dean's List must take at least 12 credits for letter grades.

Only juniors and seniors may take courses in which the grade of S or U is optional; sophomores may take courses in which *only* the grade of S or U is offered. A student may take no more than four courses (or 12 credits) on an S-U basis during his or her college career; however, more than one S-U course can be taken in one semester. S-U courses may be taken only as electives or in the 15 hours required in the College outside the major unless the requirements for a specific major indicate otherwise. Freshmen enrolled in Engl 137 and 138 (offered with S-U grades only) are permitted to apply these courses to the Freshman Seminar requirement.

In order to take a course for an S or U, a student must first make sure from *Cornell University: Description of Courses* the course is offered on that basis, then obtain the permission of the instructor and file a special S-U form with the instructor's signature and the Add/Drop/Change form in the Office of Records and Scheduling before the end of the third week of the term. After the third week of the term, students must petition the Assistant Dean to have the S-U grading status changed. Forms are available in the Office of Records and Scheduling and in the Division of Academic Services.

Incompletes

A grade of INC (incomplete) is given when a student does not complete the work for a course on time, but when the instructor feels that the student had a valid reason. A student with such a reason must discuss the matter with the instructor and request an INC. A grade of incomplete remains permanently on the student's official transcript even after the work has been completed and the final grade recorded.

A student who receives an INC in a course may be permitted a maximum of two semesters and a summer in which to complete the work and receive a regular grade; if the work is not completed by that time, the INC remains on the record, and no credit is given for the course.

To receive a grade of INC a student fills out a Student-Faculty Agreement for Assignment of the Grade of Incomplete form and then has a conference with the instructor — preferably before study period — to work out the agreement. The form must be submitted by the instructor with the final grade cards whenever an incomplete is given.

This form is for the student's protection, particularly in the event that a faculty member with whom a course is being completed leaves campus without leaving a record of the work completed in the course.

If circumstances prevent a student from being present to consult with the instructor, the instructor may, if requested by the student, initiate the process by filling out and signing part of the form and turning it in to the Office of Records and Scheduling with a grade card. Before a student will be allowed to register for succeeding semesters he or she must go to the Office of Records and Scheduling to fill out and sign the remainder of the form.

If the work is satisfactorily completed within the required time, the course appears again on the student's official transcript, with the final grade received, for the semester in which the course was completed.

A student who completes the work in the required time and expects to receive a grade must take the responsibility for checking with the Office of Records and Scheduling (about two weeks after the work has been handed in) to make sure that the grade has been received. Any questions should be discussed with the course instructor.

Academic Standing

All matters relating to academic achievement are handled by the Committee on Academic Status. The committee has five members from the faculty, and the Assistant Dean of the College is an ex officio member. The committee acts as an appeals board for decisions made by the Assistant Dean on petitions that students have submitted.

The committee also recommends to the faculty the students to be awarded degrees with distinction.

The committee reviews, at the end of each term, the records of those students whose work is considered unsatisfactory and takes action accordingly. Any of the following circumstances call for review by this committee: (1) the student's grade point average for the semester is below 1.7; (2) the student's total cumulative average is below 1.7; (3) the student has completed fewer than 12 credits of academic work in the semester without the permission of the Assistant Dean; or (4) there is other information to suggest that the student is not making normal progress toward the bachelor's degree.

Following review of a student's record, the committee may take any of these actions: place the student in good standing or on a list for further review at the end of the following term, place the student on warning or severe warning, or suspend or drop the student from the College. The academic record of students previously placed on warning or severe warning is reviewed at the end of the following term. In addition, a student on severe warning is expected to meet with the committee after receiving midterm grades to review his or her progress.

A student who suspects that he or she may be in academic difficulty requiring review by the committee is advised to take certain steps in advance of that review. First, students should consult anyone who may be able to help — for example, the course instructors, a counselor, the faculty adviser, or a member of the medical staff. In some cases, one or more of these persons may, at the student's request, be able to provide the committee with information regarding extenuating circumstances. Confidential information *will not be revealed* by University Health Services, the Dean of Students Office, or counselors in the Division of Academic Services *without the permission of the student.* Students may write directly to the committee (by writing to the chairman or the Assistant Dean) and presenting information on their own behalf. Any information submitted to the committee by students or by others is held in confidence.

Honors

The College encourages high academic achievement and recognizes outstanding students in several ways.

Excellence in academic achievement is recognized each semester by placing on the Dean's List the names of students who have completed satisfactorily at least 12 credits with letter grades other than S or U and who rank in the top 10 percent of their class for the semester. No student who has received an F or U in an academic course will be eligible.

Degree with honors. This degree recognizes outstanding scholastic achievement in an academic field. Programs leading to a degree with honors are offered to selected students by the Department of Human Development and Family Studies and the Division of Nutritional Sciences. Information about admission to the programs and their requirements may be obtained from the department, the division, or from the Division of Academic Services.

Omicron Nu seeks to promote graduate study and research and to stimulate scholarship and leadership toward the well-being of individuals and families. As a national honor society in the New York State College of

Human Ecology, it stimulates and encourages scholarly inquiry and action on significant problems of living — at home, in the community, and throughout the world.

Students who are juniors are eligible for membership if they have a cumulative average of not less than B. Transfer students are eligible after they have completed one year in the College with a B average. Current members of Omicron Nu elect new members. Not more than 10 percent of the junior class may be elected to membership, and not more than 20 percent of the senior class may be elected. Graduate students nominated by faculty members may be elected.

Degree with Distinction recognizes outstanding scholastic achievement. Seniors whose academic standing at the end of seven semesters is in the top 10 percent of the graduating class will be considered. The honor is conferred on those seniors who are in the top 5 percent of the class after grade point averages have been adjusted by including grades for transfer work and after grades earned in the 5th, 6th, and 7th terms have been given double weighting in the final average. The graduating class includes students who will complete requirements for Bachelor of Science degrees in January, May, or August of the same calendar year.

To be eligible for consideration, transfer students must have completed 45 credits of work at Cornell. In determining the academic standing of a transfer student, previous work taken at another institution is included in the computation of the student's academic average. Names of seniors who meet these requirements are presented to the faculty of the College for approval.

Special Opportunities

Several special programs allow students to receive academic credit for internship experience, to study *in absentia,* or to enter particular graduate programs after their junior years:

Human Ecology Field Study

See Field Study Office.

University Programs

Courses taken in the Africana Studies and Research Center (ASRC) may be used to meet some of the distribution requirements of the College. Up to two courses or eight credits of such courses may be applied toward the 12 additional credits in natural and social sciences (Section I-C of the graduation requirements) or toward the 9 additional credits in communication, analysis and humanities (Section II-B). This allowance is in addition to the Freshman Seminar credits that may be taken in Africana Studies. Other courses taken in the Center count as endowed division electives.

A list of ASRC courses approved for meeting distribution requirements or for electives is available in the Division of Academic Services and in the Office of Records and Scheduling.

Dual-Registration Programs

Graduate School of Business and Public Administration. A limited number of highly qualified students from Cornell undergraduate divisions, including Human Ecology, may be accepted by Cornell's Graduate School of Business and Public Administration after their junior years. Students need the approval of the admissions office at the School of Business and Public Administration and the Assistant Dean in the College of Human Ecology. Accepted students should be aware that if the course work taken in the B&PA school in their senior year is in excess of 21 additional credits allowed in the Cornell endowed divisions, they will be charged per credit for the additional hours ($116.14 per credit in 1978–79).

Cornell Medical College. A limited number of highly qualified students from three Cornell divisions, including Human Ecology, may be accepted to the Cornell Medical College after their junior years. To be considered for this program, students must have completed 105 credits toward graduation by the end of their junior years. Students also need to plan ahead to ensure that distribution requirements for the B.S. degree will be met. Accepted students receive 15 credits toward the B.S. degree from their first year of study at the College of Medicine. Interested students should contact the Health Careers Program Office in the University Career Center, Sage Hall.

Off-Campus Programs

Merrill Palmer Institute in Detroit provides programs of specialized study in the behavioral sciences for students enrolled for a degree elsewhere. The Institute is open to students who are interested in furthering their understanding of human development and human behavior as this relates to the family and to the urban community. Students from any department of the College may apply to attend and will receive credit for the courses completed *in absentia*.

New York State Assembly. A limited number of session internships are available in the spring semester to sophomores, juniors, and seniors who are enrolled in New York State colleges or universities. Human Ecology students applying to the program must arrange for academic credit for this experience through their major department. The New York State Assembly also sponsors a summer internship. Further information about Assembly internships and other internship programs may be obtained through the College's Career Planning and Placement Office.

Ithaca College. Full-time undergraduate students at Cornell may petition to enroll in courses at Ithaca College. Students pay their regular full tuition to Cornell and only special fees to Ithaca College where they exist. Students are allowed to register for one course each term and a maximum of twelve credits in four years. Exceptions will be granted to Cornell students enrolled in courses in teaching methods or in practice teaching at Ithaca College.

Cornell students are eligible to register only in Ithaca College courses that are relevant to their program and that do not duplicate Cornell courses. Acceptance of Cornell students into Ithaca College courses is on a space-available basis. Participation in this program is not guaranteed, and Ithaca College has the right to accept or reject students for whatever reasons it deems appropriate. The program is available only during the fall and spring semesters.

For further information, contact Assistant Dean William H. Gauger in 114 Martha Van Rensselaer Hall.

Empire State Students

Occasionally, students who are completing requirements for a degree through the Empire State College Program are interested in taking a human ecology course. They can do so by registering through the Cornell Extramural Division, 105 Day Hall. All rules of the Extramural Division apply, including that registrations will be accepted on a space-available basis and only on written approval of the course instructor.

At the time of registration, Empire State College students provide the Extramural Division with a completed copy of the Empire State College "Notification of Cross-Registration" form number SA-22, F-031 to verify enrollment in Empire State College.

Such students will be charged 25 percent of the standard extramural tuition per credit. In this case, all the tuition will be retained by the Extramural Division, and none will be returned to the statutory college in which the course is offered. In special situations (such as biological science) where it is not clear whether a given course is offered by a statutory or an endowed college, it is the student's responsibility to obtain written verification from the college that the course is a statutory college course entitled to the reduced tuition rate.

Division of Academic Services

B. Morse, chairman; R. J. Babcock, P. Holmes, E. E. Martire, H. J. Pape, M. Thomas, V. Vanderslice, R. West, N. Yaghlian

Field Study Office

T. Stanton, director; C. Cook, M. Whitham

The Field Study Office was established in 1972 to develop and implement interdisciplinary, field-related programs, as well as to give assistance to faculty and students interested in field study options throughout the College. In addition, the office staff, with the guidance of the interdepartmental field study faculty committee, makes policy recommendations about field learning and evaluates current offerings.

Field study involves incorporating the learning environments of the classroom and library with participation in organizations outside the University where students experience the complexities of social issues firsthand. Field study provides opportunities for students to test their classroom learning, to develop a deeper understanding of critical issues facing their placement settings, and defines the ways that experience and theories clarify each other. The process of meshing theory and practice distinguishes field study from job experience; this distinction is the basis of the rationale for granting field study credit.

Field study courses offered through the five departments in the College generally are related to specialized disciplines and emphasize professional exploration or training. While the offerings of the Field Study Office may provide opportunities to test career options, their focus is on an interdisciplinary approach to social issues. Field study courses are designed to help students develop a framework for thinking more systematically about the nature of social systems and the strategies for meeting human needs. It is expected that students will acquire a better understanding of the assumptions made by different groups with conflicting interests as well as an appreciation of the variety of disciplines needed to solve social problems.

For further information, contact the Field Study Office, New York State College of Human Ecology, Cornell University, 159 Martha Van Rensselaer Hall, Ithaca, New York 14853.

Community Service Education

Irving Lazar, chairman; H. Y. Nelson, graduate faculty representative; J. Allen, R. J. Babcock, D. J. Barr, S. Blackwell, E. Conway, A. Davey, D. Deshler, C. Farris, J. L. Ford, W. W. Horne, C. C. McClintock, M. Minot, B. J. Mueller, L. A. Noble, C. Reed, R. C. Rist, C. Shapiro, L. Street, B. L. Yerka

The Department of Community Service Education (CSE) is primarily concerned with the education of human service professionals — people who can design innovative programs for effecting change, participate in the implementation of such programs, and analyze the impact of those programs on society. The department's undergraduate program includes options to prepare students to teach home economics (Option I), to serve as social workers (Option II), or to engage in educational work with adults in community settings (Option III). In addition, the department, in collaboration with the Department of Consumer Economcs and Housing, offers an interdepartmental major in social planning and public policy. Facilities for student use include the instructional resource center, a workroom for preparing material, and multimedia equipment.

Options

In Education (Option I) the curriculum focuses on human development, the family, and consumer decision making and resource management. Students completing Option I are prepared for professional roles as teachers of youth and adults, educational consultants, and developers of educational materials. (New York State certificate of qualification for teaching home economics in K-12 grades is automatically received upon completion of the option.)

In Social Work (Option II) the undergraduate program, which is accredited by the Council on Social Work Education, prepares students for entry-level employment in social work and other human service professions. In addition, students who complete this curriculum are eligible to apply to graduate schools of social work for an accelerated one-year M.S.W. program.

Adult and Community Education (Option III) prepares students to appreciate the special learning needs, interests, and concerns of adults and to acquire skills that will enable them to respond appropriately to the problems they encounter. Each student selects an area of concentration within the areas of community planning and development, community health and nutrition, consumer economics and education, gerontology, parents and youth, or family resource management.

In the Interdepartmental Major in Social Planning and Public Policy students have an opportunity to acquire knowledge and skills to assess local and regional needs and to develop and evaluate plans for meeting these needs. Students are given professional training geared to helping state and local agencies implement social programs and develop public policy. The Department of Community Service Education participates in this

major jointly with the Department of Consumer Economics and Housing.

Students interested in any of the above areas should consult with department faculty members for current information about programs. Requirements for the department major are also available from the Division of Academic Services. Details of the field experience requirements will be available before course enrollment.

Academic Advising

The department's curricula are demanding; each of the options require breadth and depth in several areas. The core courses (202, 203, and 292) must be taken in the freshman and sophomore years, and prerequisites for each of the options should be completed before the junior year, if possible. (Special provisions are made for junior transfers.) Each student must have a practicum supervised by the faculty which is directly relevant to his or her professional preparation.

It is important for a student who is interested in majoring in community service education to declare that major and to select an option as early as possible. Once the major is declared, the departmental advising coordinator, Edythe Conway, assigns an adviser from the faculty. A student who is unsure about which option to pursue should talk with a faculty adviser. With judicious planning, an opportunity to change options or the major can be built into the program. When an option is changed, the student is reassigned to an appropriate adviser.

Consumer Economics and Housing

E. S. Maynes, chairman; A. J. Davey, graduate faculty representative; H. B. Biesdorf, W. K. Bryant, P. Chi, S. Clemhout, M. S. Galenson, W. H. Gauger, J. Gerner, A. J. Hahn, B. Hall, M. Johnson, M. Lea, C. Meeks, J. Robinson, N. C. Saltford, J. Swanson, K. E. Walker, E. Wiegand

Increasing concern with the welfare of the consumer in society is evident at all levels of government and in private industry. The Department of Consumer Economics and Housing (CEH) offers students an opportunity to study in this developing field. Programs for students majoring in the department focus on social and economic policies as they affect individuals and families; an understanding of economics and sociology, particularly those aspects relating to consumption and to housing problems, is basic. Students who complete their undergraduate work in this department are well prepared for a variety of positions within an expanding field of consumer-related work.

Faculty members in the department represent a broad range of special interests within the field and provide depth through a diversity of backgrounds and experiences. In addition to teaching undergraduate courses, most are involved in research and in teaching at the graduate level. Several teach in the College's public service and extension program operating throughout the state and serve on numerous committees, at both the state and national level, that deal directly with current issues affecting society.

At the undergraduate level, the student is offered two options within the Department of Consumer Economics and Housing: consumer economics or housing.

Options

Consumer Economics is concerned with the economic behavior and welfare of consumers in the private, public, and mixed sectors of the economy. Emphasis is on how consumers allocate their scarce resources, which include time and money. This option requires a strong foundation in those subjects that contribute to an understanding of the market economy and of consumers' rights and responsibilities. Many graduates from the consumer economics option find careers in government agencies providing consumer services, while others choose to work in business and industry in consumer-relations divisions or in consumer-related community programs.

Housing, a major societal problem, is studied through an interdisciplinary approach that includes the methods and models of sociology, economics, and political science. This option focuses on housing consumption and production in the context of the housing market. In addition, the social implications of housing related to household preferences, mobility, and involvement in neighborhood change are emphasized. Attention is given to the development of social science research skills for the analysis and evaluation of housing policies and programs. Recent graduates have taken positions with local, state, and federal agencies dealing with housing problems.

In the **Interdepartmental Major** in Social Planning and Public Policy, students have an opportunity to acquire knowledge and skills to assess local and regional needs and to develop, implement, and evaluate policies and plans for meeting these needs. Students learn to work as professionals to help state and local agencies implement social programs and develop public policy. The Department of Consumer Economics and Housing participates in this major with the Department of Community Service Education.

The department offers programs leading to bachelor's, master's, and doctoral degrees. Students seeking additional detailed information about graduate programs in this department should write to the Graduate Faculty Representative, Department of Consumer Economics and Housing, New York State College of Human Ecology, Cornell University, Martha Van Rensselaer Hall, Ithaca, New York 14853.

Academic Advising

The major is flexible and allows individual program planning. All students majoring in consumer economics and housing are assigned a faculty adviser by the advising coordinator. The earlier the decision to major in the department is made, the greater the opportunity to develop a program to meet the student's educational or career goals. Transfer students are urged to discuss their plans with a faculty adviser as soon as possible.

All faculty members serve as advisers. If a student wishes, he or she may select an adviser, and if the faculty member's work load permits, the choice will be approved. Talking with the advising coordinator in the department can help match the student's needs with the special interests of a faculty member. Students are free to change advisers at any time. An appointment to talk with either an adviser or the advising coordinator, Jean Robinson, may be made directly with the faculty member or through the secretary in 116 Van Rensselaer Hall.

Design and Environmental Analysis

R. Steidl, chairman; N. C. Saltford, graduate faculty representative; G. Atkin, R. L. Barker, F. D. Becker, M. Boyd, A. Bushnell, C. C. Chu, L. Gallup, C. E. Garner, J. H. Hanna, B. A. Lewis, W. J. McLean, S. H. Mensch, G. C. Millican, S. K. Obendorf, E. R. Ostrander, M. Purchase, A. Rachun, A. Racine, R. Rector, G. Sloan, C. Straight, S. S. Watkins, M. V. White, C. Yackel

The focus of the department is on creating, selecting, and improving the products, materials, and spaces used in work and leisure activities. The diverse faculty backgrounds and teaching approaches lead to multidisciplinary problem solving and development of creative abilities, aesthetic judgment, and analytical thinking.

The department offers an undergraduate major in design and environmental analysis with four specializations: interior and product design, apparel design, textiles, and human and social factors. Contact the department or the Admissions Office of the College of Human Ecology for further information about these areas of specialization and career opportunities.

The department also offers graduate study leading to a master's degree. For information contact the Graduate Faculty Representative, Department of Design and Environmental Analysis, New York State College of Human Ecology, Cornell University, Martha Van Rensselaer Hall, Ithaca, New York 14853.

Options

The department offers undergraduate education in four professional areas: interior and product design, apparel design, textiles, and human and social factors. These areas of specialization or options are based on subject matter in the following areas.

Design. An introduction to visual language that includes the elements and principles of two- and three-dimensional design, color theory, and drawing.

Physical science. Study of the chemical, physical, and structural properties of materials such as textiles, wood, and plastics.

Social science. Psychological, sociological, and managerial analyses are made of people's relationship to their physical environment.

Students learn multidisciplinary problem-solving skills while developing their creative abilities, aesthetic judgment, and analytical thinking. Excellent laboratory and studio facilities permit exploration of textiles and other materials and design concepts through analytical and creative problem-solving techniques.

Academic Advising

The advising coordinator matches each design and environmental analysis major with a faculty adviser during the first semester. During the fall semester, the advising coordinator will be Frank Becker. The faculty adviser can help plan a program and may be consulted about future goals, department requirements, the sequence of courses, or electives. Students in Option 1a, interior and product design, and 1b, textile design, must begin especially early to plan and collect materials for a portfolio, which is necessary when applying for a position or to graduate school and the faculty adviser can recommend what should be included.

Human Development and Family Studies

P. Schoggen, chairman; J. Condry, Jr., graduate faculty representative; M. Basseches, H. T. M. Bayer, W. L. Brittain, U. Bronfenbrenner, M. Cochran, J. Doris, H. Feldman, S. Hamilton, J. Harding, B. Koslowski, L. C. Lee, B. Lust, G. Marmor, G. McCord, P. Moen, M. Potts, H. N. Ricciuti, B. L. Richardson, R. Savin-Williams, M. Segal, R. Silverstein, G. Suci, M. Whitham

The programs of the Department of Human Development and Family Studies (HDFS) combine a broad theoretical background in human development and family studies with specialization through additional course work in a chosen area of interest. Participative courses give students a chance to apply their knowledge. The size and combination of the department's programs of instruction, public service, and research provide diverse opportunities for students to prepare for careers or for graduate study. College teaching and research, social work, medicine, law, and clinical psychology all require graduate education. Positions such as research technicians, program assistants, personnel supervisors, youth counselors, and child care workers may be available to graduates with the bachelor's degree. The department does not offer programs leading to teaching certification at any level.

The Curriculum

During their first two years, students are expected to combine a variety of liberal arts courses with three human development and family studies core courses: HDFS 115, Human Development: Infancy and Childhood; HDFS 116, Human Development: Adolescence and Youth; and HDFS 150, The Family in Modern Society. This encourages diversity yet ensures a common base for upper level courses in the major.

Courses within the department vary from lectures and discussions to research and independent study. All students are required to observe and participate in a laboratory or field study course.

A major takes at least one basic course in each of three areas: cognitive development, personality and social development, and the family and society. Courses deal with language and learning; individual, social, personality, and cognitive development; the family in its traditional and contemporary forms; and settings for human development outside the home, particularly day care and nursery school environments. People are studied at all levels and stages of life, with emphasis on the years from infancy through adolescence.

The major requires a minimal number of core courses for all majors. Students have wide opportunity to develop concentrations by taking courses throughout the University. Students who plan to work immediately after graduation should prepare themselves for the job they want.

Academic Advising

Students majoring in human development and family studies are assigned a faculty adviser by the advising coordinator, Ann Dyckman (NG 14 Martha Van Rensselaer Hall). Students are free to change their adviser as their own interests change and should see the coordinator when contemplating a change. *Consultation with a faculty adviser is strongly recommended.* Student advisers and special career programs provide additional help for students.

Social Planning and Public Policy

The legislative trend in the United States that is moving public policy development from the federal to the state and local levels emphasizes the need for trained personnel in social planning and public policy. The Interdepartmental Major in Social Planning and Public Policy is designed to meet this need. The program is sponsored jointly by the departments of Community Service Education and Consumer Economics and Housing.

Students increase their knowledge of (1) the historical development and the current issues in social planning and public policy; (2) the ways policies and plans are formed, implemented, evaluated, and changed; (3) social systems, from the structure and functioning of contemporary society to the dynamics of individual and group behavior; and (4) values that help foster and maintain some policies and plans rather than others.

Students electing this major have opportunities to improve their skills in policy analysis, evaluative research, developing information systems, engaging consumers in the planning and policy making process, and budgeting.

Options

Two options are available in the major; a student selects the one most suited to his or her other interest and career plans and completes the necessary requirements. Either option prepares a student for graduate or professional study.

Option I: Social Planning

Option I prepares students for careers in planning the organization and delivery of human services. Social planners are employed in county, regional, and state planning agencies and assist public and private health and social agencies in the design, development, and evaluation of regional and local programs.

Option II: Public Policy

Option II is planned for students who are primarily interested in the evaluation of public policy alternatives, especially implications of these policies for consumers and households. Graduates may build careers as researchers or policy analysts in planning departments or other public or private agencies at the local, regional, state, or federal level in areas related to housing, welfare, income and employment, or consumer affairs.

Academic Advising

Faculty advisers whose interest and experience lie in the fields of social planning and public policy are available to advise students on career goals and to help plan curricula. If a student decides on the major by the end of the freshman year, a faculty adviser will be assigned to help plan a curriculum in the fall of the sophomore year.

Advising coordinators Alan Hahn and John Ford will be glad to answer questions about the advising system. To consult them or any faculty advisers in the program, make an appointment in 120A Martha Van Rensselaer Hall.

New York State School of Industrial and Labor Relations

Administration

Robert B. McKersie, Dean
Lois S. Gray, Associate Dean, Extension and Public Affairs
Robert E. Doherty, Associate Dean, Academic Affairs
Frank B. Miller, Director, Office of Resident Instruction
Shirley Harper, Librarian
Ronald G. Ehrenberg, Director, Research
Frances Benson, Director, Publications
George M. Calvert, Director of Budget
Robert Aronson, Graduate Field Representative
Donald E. Cullen, Editor, *Industrial and Labor Relations Review*

Degree Program

	Degree	*HEGIS Code*
Industrial and Labor Relations	B.S.	0516

The School

The School of Industrial and Labor Relations at Cornell is a small college within a large university, and it tries to maintain the small-college atmosphere that would be expected of a college that has about six hundred undergraduates and approximately one hundred graduate students.

The School's home is a unified complex of classroom buildings, library, and administrative and faculty offices clustered around two courtyards. Daily classroom activities and other school events provide many opportunities for Industrial and Labor Relations students and faculty to interact. At the same time, students are members of the larger Cornell community and participate in its programs.

Half of the School's typical freshman class come from the greater New York City area. Another 30 percent live in other parts of New York State. Students from other states and a few from foreign countries make up the rest of the class. Enrollment of women has been increasing in recent years, and the current ratio of men to women in the School is about two to one.

Students enrolled in the School of Industrial and Labor Relations at Cornell may take a substantial number of courses in the other six undergraduate colleges and schools of the University, including the College of Arts and Sciences and have access to all of the libraries and other facilities.

The School operates in four areas: (1) undergraduate and graduate resident instruction, (2) extension and public service, (3) research, and (4) publications. It provides instruction to young people on campus who are preparing for careers in the field, as well as to men and women already engaged in industrial relations activities and the general public through its Extension and Public Service Division.

The School's Conference Center, part of the extension division, initiates and hosts conferences covering the full scope of industrial and labor relations. Thus, the center is another means of providing continuing education and information to practitioners and scholars.

The Research Division develops materials for resident and extension teaching and originates studies in industrial and labor relations. The Publications Division publishes and distributes the research results.

Departments of Instruction

Courses in the School are organized into six departments:

Collective Bargaining, Labor Law, and Labor Movements studies the history of the labor movement and collective bargaining in the United States, as well as the role of government in labor relations.

Economic and Social Statistics includes the principles of statistical reasoning, statistical methods, and the application of statistical tools of analysis.

International and Comparative Labor Relations is concerned with industrial and labor relations developments in other countries, both industrialized and less developed.

Labor Economics deals with analysis of the labor force, labor markets, wages and related terms of employment, income distribution, unemployment, health and safety in industry, and retirement.

Personnel and Human Resource Management develops a knowledge of historical and legislative foundations of the manpower, or personnel, function within work organizations.

Organizational Behavior investigates human behavior in organizations through psychology and sociology. Courses treat individual human behavior, organizations in society, and industrial society.

A full list of required and elective courses is available from the School's Office of Resident Instruction.

Resident Instruction

This division conducts the on-campus programs leading to the degrees of Bachelor of Science, Master of Industrial and Labor Relations, Master of Science, and Doctor of Philosophy from Cornell.

Office of Resident Instruction

Staff members from the Office of Resident Instruction, 101 Ives Hall, work closely with faculty and faculty committees to administer degree programs for the School. The office's responsibilities include the admission and the orientation of new students, maintaining students' personal and academic records, administering the faculty advisory system and academic standards, counseling students on personal and academic problems, and administering the School's financial aid programs. The office also provides a career counseling service and works closely with seniors that are planning graduate study.

Counseling and Advising

As entering freshmen, students will be assigned a counselor in the Office of Resident Instruction for orientation, academic advising, and counseling throughout the first year. (Transfer students are assigned counselors only for their first term.)

At the end of the first year (or term), each student will be assigned a faculty adviser. All teaching faculty members serve as advisers, and students' preferences for advisers are followed whenever possible.

Minority Students. Cornell University administers a variety of special opportunity programs designed to provide financial assistance and other forms of assistance to (1) minority students and (2) low-income students meeting program guidelines. The emphasis of these special programs is to aid in increasing representation of students from minority groups present in New York State who historically have been underrepresented in higher education. Participation is also available to those residing outside New York State. For details, prospective students should consult the *Guide for Candidates* which accompanies each undergraduate application or will be sent upon request by the Office of Admissions.

Study Options

Several study options are open to ILR undergraduates, making it possible to tailor a program to fit specific needs.

One such option is the five-year ILR master's degree. With early planning, some students may earn the M.S. degree in the fifth year.

Using another option, some ILR students arrange for dual registration in Cornell's Graduate School of Business and Public Administration (B&PA), earning their bachelor's degree in ILR and a master's degree in B&PA after five years of study.

Some students elect to spend a junior semester in New York City, with a chance to observe actual labor problem solving, or as much as a year of study at a foreign university. Others opt for internships that give them practical field experience, such as a summer in New York City's Office of Collective Bargaining or a term doing research for the New York State Senate Committee on Labor in Albany.

A number of ILR courses deal directly with today's problems and involve fieldwork in the Ithaca area, elsewhere in New York State, and even in foreign countries. These courses take some students to the state legislature in Albany or to community action groups. Others may work in prisons or mental institutions.

The ILR program allows you to receive course credit for individually directed studies, where you conduct your own research supervised by a faculty member.

Study *in Absentia*

Students wishing to study at another institution for a semester or for a year and receive credit toward their undergraduate degree may petition to study *in absentia*. This permits students to study at a foreign university or at another American school that offers a program unavailable at Cornell. Eligibility requires good standing and approval of study plans by the Director of Resident Instruction. Course work taken *in absentia* is usually not evaluated for transfer credit until the work has been completed and the student has returned to the School. Students then submit a course syllabus and other evidence of content to the chairman of the department that might have offered the respective course, or to a counselor in the Office of Resident Instruction if the course is more appropriate as an elective.

Leave of Absence or Withdrawal

If a student desires to withdraw or to take a leave of absence from the University, an interview should be scheduled with a counselor in the Office of Resident Instruction. Counselors will assist students in petitioning for a leave of absence.

Requirements for Graduation

To earn the Cornell Bachelor of Science degree in industrial and labor relations, the student needs to complete successfully 120 credits. Normally, this requires eight terms, although some students finish their studies in a shorter time.

Required Courses
(52 credits)

The current curriculum prescribes the courses and subjects listed in the table below to be taken in the terms indicated during the freshman, sophomore, and junior years. In the senior year, all courses will be electives.

Elective Courses
(68 credits)

A minimum of 30 credits of your elective courses must be selected from the courses offered by the School. No more than 8 of these 30 hours may be satisfied by I&LR 499, Directed Studies.

The remaining 38 credits may be selected from the courses of any other college at Cornell, but a student who takes more than 33 credits in the endowed colleges (the College of Architecture, Art, and Planning; the College of Arts and Sciences; the Graduate School of Business and Public Administration; the College of Engineering; and the School of Hotel Administration) will be billed for the additional tuition at the current cost per credit.

The number of credits that may be taken in the endowed colleges at no additional cost to the student may be changed at any time by official action of the School.

Required Courses

Course or Subject	*Credits*	*College*	*Term*
Freshman year			
Freshman Seminars	6	A&S*	Fall and spring
Introductory Economics	6	A&S	Fall and spring
Introduction to Psychology	4	A&S	Fall
History of Industrial Relations in the United States	6	ILR	Fall and spring
Development of Economic Institutions	3	ILR	Spring
Society, Industry, and the Individual	6	ILR	Fall and spring
Physical education	0		Fall and spring
Sophomore year			
Labor Relations Law and Legislation	3	ILR	Fall
Economics of Wages and Employment	3	ILR	Fall
Statistics	6	ILR	Fall and spring
Collective Bargaining	3	ILR	Spring†
Personnel Management	3	ILR	Spring
Junior year			
Economic Security	3	ILR	Fall

*College of Arts and Sciences.

†May be postponed to the fall of the junior year.

Recommended Courses Offered by the College of Arts and Sciences

Government. Government III, American Government and Politics, is a prerequisite to most other courses offered by the department of Government. It is strongly recommended as an elective, preferably in the sophomore year.

Mathematics. Students considering graduate work in any of the social sciences are strongly urged to take appropriate courses in mathematics, such as calculus (Mathematics 111–112 or Mathematics 107–108).

Freshman Year

Fall Semester	*Credits*
Freshman Seminar (A&S*)	3
Introductory Economics (Economics 101, A&S)	3
Introduction to Psychology (Psychology 101, A&S)	4
History of Industrial Relations in the United States (I&LR 100)	3
Society, Industry, and the Individual I (I&LR 120)	3
	16

Spring Semester	*Credits*
Freshman Seminar (A&S)	3
Introductory Economics (Economics 102, A&S)	3
Society, Industry, and the Individual II (I&LR 121)	3
Development of Economic Institutions (I&LR 140)	3
Special Studies in the History of Industrial Relations in the United States (I&LR 101)	3
	15

Sophomore Year

Fall Semester	*Credits*
Labor Relations Law and Legislation (I&LR 201)	3
Economics of Wages and Employment (I&LR 240)	3
Statistics I (I&LR 210)	3
Personnel Management (I&LR 260, also offered spring semester)	3
Electives	3
	15

Spring Semester	*Credits*
Collective Bargaining (I&LR 200)	3
Economic and Social Statistics (I&LR 211) or Design of Sample Surveys (I&LR 310) *or*	3
Statistics II (I&LR 311)	4
Electives	9
	15 or 16

Junior Year

Fall Semester	*Credits*
Economy Security (I&LR 340)	3
Electives	12
	15

Spring Semester	*Credits*
Electives	15
	15

Senior Year

Fall Semester	*Credits*
Electives	15

Spring Semester	*Credits*
Electives	13 or 14

Schedule Changes

Occasionally it may be necessary for a student to request changes in his or her course schedule either before a term begins or during the semester. Such requests *must be directed to the Office of Resident Instruction* in order to avoid possible loss of academic credit or failing grade.

Class Attendance

It is each student's responsibility to attend all scheduled classes unless approved excuses have been given by the faculty. In some courses an instructor may permit a maximum number of class absences without a grade penalty or dismissal from the course. An approved explanation for absence from class occasionally may be granted in advance of the expected absence by the Office of Resident Instruction. An approved absence may be warranted by:

1) participation in authorized University activities, such as athletic events, dramatic productions, or debates;
2) medical problems supported by record of clinic or infirmary treatment;
3) serious illness or death in immediate family;
4) other circumstances beyond the student's control.

A request for approval of an absence should, when possible, be made to the Office of Resident Instruction *before the date of expected absence*. A reported and approved explanation of absence does not relieve a student from fulfillment of academic requirements during the period of absence. The course instructor has the authority to determine what work must be completed. The office can only confirm the explanation for absence. Students should inform the Office of Resident Instruction of any problems they have meeting course requirements.

Academic Standing and Grades

Academic Integrity

In 1977 the faculty of the School of Industrial and Labor Relations approved a revised code of academic integrity. This code, while based on the Cornell University code, varies somewhat. Copies are available from the Office of Resident Instruction.

Dean's List

A Dean's List is compiled for each of the four undergraduate classes each semester on the seventh day following receipt of final grades from the Registrar. To be eligible for the Dean's List a student must meet *all* of the following criteria as of that date:

1) have a semester average of 3.2 or better and rank in the top 20 percent of the class;
2) have a minimum of 12 letter-graded credits for the semester;
3) have completed all courses registered for at the beginning of the semester;
4) have satisfied all requirements for good standing.

Academic Standing

Good standing requires that all of the following criteria be met at the end of each term.

1) An average of C– (1.70) for the semester's work, including a minimum of 8 completed and graded credits.
2) No failing grades in any course, including physical education.
3) A cumulative average of C– (1.70) for all completed terms.

If at the end of any term in which a student fails to maintain good standing or if overall academic performance is so marginal as to endanger the possibility of meeting School and University degree requirements, his or her record is reviewed by the Committee on Academic Standards and Scholarships. The committee may issue a written warning to the student at that time.

Involuntary Separation from the School for Academic Reasons

A student may be denied permission to reregister at the end of any term when he or she has failed:

1) to establish good standing after a semester on warning;
2) to maintain an average of 1.70 in any term after a previous record of warning;
3) to achieve good standing after being on warning any two previous semesters;
4) two or more courses in one term or has a term average of 1.00 or below.

The Academic Standards and Scholarship Committee may decide to permit a student to remain on warning more than one semester if there has been significant improvement even though the cumulative average is still below 1.70.

S-U Grading Policy

An undergraduate may register to receive a final grade of S (Satisfactory) or U (Unsatisfactory) in courses that offer this option — either in the School or in other divisions of the University — subject to the following conditions:

1) in ILR and in out-of-college course electives *only,* not in directed studies;
2) registration is limited to two S-U courses per term;
3) S-U registration is limited to 4 credits per course;
4) students registering for S-U grades must be in good standing;
5) graduation requires 105 letter graded courses.

ILR faculty members assign a grade of U for any grade below C– and a grade of S for any grade of C– or better. A U is considered equal to an F in determining a student's academic standing although it is not included in the cumulative average.

No change of grading (from letter to S-U or from S-U to letter) may be made after the first three weeks of class. *There are no exceptions* to this restriction and appeals will not be accepted.

Incomplete Grades

An incomplete is a grade assigned when the course has not been completed for reasons that are acceptable to the instructor. It is understood that the work may be completed later and credit given. Instructors may grant an incomplete grade for a limited number of clearly valid reasons, but only to students with substantial equity in a course. A firm and definite agreement on the conditions under which it may be made up must be made with the instructor. The School's policy allows a maximum of two full terms of residence for removal of an incomplete. An incomplete grade not made up within this time automatically becomes an F.

Special Academic Programs

In order to meet the special academic objectives of some students, the School's faculty has established several special academic programs. For additional information please contact a counselor in the Office of Resident Instruction. Counselors will explore the program with students to help them decide if it suits their interests.

Dual Registration in Business and Public Administration

Dual informal registration in the School of Business and Public Administration leads to a Bachelor of Science degree in Industrial and Labor Relations and a Master's degree in Business and Public Administration after five years of study and is open to students who meet the requirements of the Graduate School of Business and Public Administration.

Early planning and application by each student, preferably in the sophomore year, is desirable to ensure that Business and Public Administration expectations and the Industrial and Labor Relations curriculum requirements are fulfilled. Students interested in double registration in the Graduate School of Business and Public Administration should contact the Admissions Office, 319 Malott Hall, and a counselor at the Office of Resident Instruction.

Five-Year Master of Science Degree Program

With early planning, it is possible to earn the M.S. degree in a fifth year of study. This program is designed specifically for those who wish concentrated study in an area of specialization in the School for a terminal Masters degree.

Students considering this program should consult with a counselor in the Office of Resident Instruction after their freshman year.

Junior Semester in New York City

For the past few years the Junior Semester in New York City program has provided students with a vivid understanding of problems in labor and industrial relations through observation and participation in "real-life" labor problem solving. A small number of selected students spend a term of the junior year in New York City in close contact with practitioners. Their activities include independent research under direction of ILR faculty and seminars drawing on field work experience with employers, labor organizations, and government agencies in New York City. More information about this program is available from the Office of Resident Instruction.

Junior Year Abroad

A few students each year are granted permission to register *in absentia* and continue their studies at a foreign university. Although the School does not have a fixed program for foreign study, students who have studied abroad generally receive some credit for their course work and have found it a very rewarding experience. Students may attend a foreign university of their choosing but guidance in finding and selecting programs is available from the Office of Resident Instruction and from the Career Center.

Extension Division Internship

The Extension Division provides an opportunity for undergraduates to work with the Extension staff and clientele as Extension interns. This entails research, development of teaching materials, and participation in the Division's adult education programs. Students, on their own initiative, may become involved in assisting Extension faculty in training programs and in the development of field research.

Faculty

Collective Bargaining, Labor Law, and Labor Movements

R. Donovan, chairman; G. Brooks, D. Cullen, C. Daniel, R. Doherty, H. Finch, M. Gold, J. Gross, K. Hanslowe, G. Hildebrand, R. Keeran, M. Kelly, T. Kochan, G. Korman, D. Lipsky, R. McKersie, J. Morris, P. Ross, J. Windmuller

Personnel and Human Resource Management

W. Wolf, chairman; T. DeCotiis, G. DelaCruz, L. Dyer, J. Farley, F. Foltman, W. Frank, F. Miller, S. Muller, R. Risley, W. Wasmuth

Economic and Social Statistics

P. McCarthy, chairman; I. Blumen, I. Francis, P. Velleman

International and Comparative Labor Relations

J. Windmuller, chairman; M. Clark, W. Galenson, G. Hildebrand, W. Whyte

Labor Economics

R. Ehrenberg, chairman; R. Aronson, R. Butler, G. Clark, G. Fields, G. Hildebrand, R. Hutchens, O. Mitchell, R. Smith, J. Svejnar

Organizational Behavior

L. Williams, chairman; H. Aldrich, S. Bacharach, L. Gruenfeld, T. Hammer, N. Rosen, R. Stern, H. Trice, W. Whyte

Law School

Administration

Roger C. Cramton, Dean of the Law Faculty

Albert C. Neimeth, Associate Dean for Placement and Alumni Affairs

John Lee Smith, Dean of Students

Jane L. Hammond, Law Librarian

Robert L. Oakley, Associate Law Librarian

Anne Lukingbeal, Assistant Dean for Admissions

Law School

The primary function of the Law School is to prepare attorneys for both public and private practice who are equipped to render skillful professional service and who are thoroughly conscious of the important role played by the law as a means of social control. The curriculum is designed to prepare students for admission to the bar in all American states and territories.

Ordinarily a student who is admitted to the Law School must have a baccalaureate degree from an approved college or university. The course of study leading to the degree of Doctor of Law (J.D.) covers three academic years. A limited number of students will be admitted to a program of study leading to the degree of Doctor of Law (J.D.) "with specialization in international affairs."

There are combined graduate degree programs with the Graduate School of Business and Public Administration, the Department of City and Regional Planning, and the School of Industrial and Labor Relations, as well as a special opportunity for highly qualified undergraduates in the College of Arts and Sciences to register in the Law School during their senior year.

The graduate program of the Cornell Law School is a small one, to which only a few students are admitted each year. The LL.M. degree (Master of Laws, Legum Magister) and the J.S.D. degree (Doctor of the Science of Law, Juris prudentiae Scientiae Doctor) are conferred. A small number of law graduates may also be admitted as special students, to pursue advanced legal studies without being degree candidates.

For further information, refer to *Cornell University Announcements: Law School,* obtainable from the Director of Admissions, Myron Taylor Hall.

Division of Nutritional Sciences

Faculty

Malden C. Nesheim, director; Marjorie M. Devine, associate director for academic affairs; E. Elizabeth Hester, graduate faculty representative; Mary Morrison, division honors representative; J. Apgar, G. Armbruster, R. E. Austic, A. Bensadoun, C. A. Bisogni, T. C. Campbell, G. F. Combs, W. L. Dills, A. Gillespie, J. D. Haas, J. P. Habicht, L. R. Hackler, R. Holmes, B. Hopkins, M. Immink, M. Kazarinoff, R. Klippstein, L. P. Krook, S. Kumanyika, M. C. Latham, D. A. Levitsky, B. A. Lewis, M. Mapes, D. B. McCormick, D. Miller, N. Mondy, C. Olson, M. Pimentel, M. L. Reed, J. M. Rivers, D. A. Roe, D. Sanjur, R. Schwartz, M. L. Scott, M. Stipanuk, E. Thorbecke, V. Utermohlen, D. VanCampen, P. J. VanSoest, R. G. Warner, R. H. Wasserman, E. K. Woodruff, R. J. Young, D. B. Zilversmit

The Division

The Division of Nutritional Sciences is an intercollege unit, administered jointly by the College of Human Ecology and the College of Agriculture and Life Sciences. The division coordinates and unifies undergraduate teaching, graduate training, research, and extension activities related to nutritional sciences. Students are admitted to the undergradute major through the College of Human Ecology. Students in the College of Agriculture and Life Sciences may develop a nutritional science concentration in consultation with an appropriate adviser through the General Studies Program and must meet the requirements established by the division. Courses in the division may be used to meet graduation requirements in both the College of Human Ecology and the College of Agriculture and Life Sciences.

Nutritional sciences constitutes a broad area of study that draws upon diverse disciplines to develop an understanding of the interrelationships among food, nutrition, and health. Division programs focus on the generation of new knowledge through research and the use of knowledge to alleviate human problems. Major areas of study involve: (1) nutrition: the physiological and biochemical dimensions of nutrition in relation to health; (2) food science: the quality, acceptability, and use of food by human beings; and (3) applied nutrition: the application of knowledge of nutrition, dietetics, and food science to the nutritional well-being of individuals from all age groups and socioeconomic levels.

The division offers programs leading to the bachelor's, master's, and doctoral degrees. Graduate study in nutritional sciences is administered by the graduate Field of Nutrition.

The Major

The core of the undergraduate major focuses on human nutrition and requires preparation in appropriate areas of physical and biological sciences and professional courses in nutritional sciences. All majors take basic course work in chemical and biological sciences, mathematics, and appropriate social sciences. Some choice is possible among required basic sciences. This common core of basic disciplines provides the foundation for concentrations of professional courses in the options described below. The undergraduate program is designed so that a student may prepare for a first-level position in the profession, a dietetic internship, or graduate study in the fields of nutrition, food science, medicine, community nutrition, and the biological sciences. Further, a nutritional science concentration may be combined with other majors in the two colleges.

Effective fall 1978, all entering majors will take the Cornell mathematics test during orientation week. Based on these test results, students will be advised whether further work in mathematics is required.

Some choice is possible among the required basic sciences. All students who have adequate preparation in high school mathematics and chemistry are encouraged to take Chemistry 207–208. For graduate study, many

schools require a year of college mathematics, biology, physics, and organic chemistry. Students interested in preparing for medical school should consult with the health careers advisory office for course recommendations.

Options

Nutritional biochemistry provides a basic science curriculum for students interested in advanced study in the nutritional and biomedical sciences. Course work in chemistry, biochemistry, and physiology is stressed for an understanding of nutrient action at the subcellular level.

Clinical nutrition entails course work in the natural and biological sciences and in the biological aspects of human nutrition. It is designed for students who wish to pursue advanced study or careers in human nutrition and medicine.

Community nutrition provides a basic science curriculum with supporting work in the social sciences and biocultural aspects of nutrition. The program aims at training students for advanced study and/or careers in community nutrition and nutrition education and enables them to help people translate knowledge about food and nutrition into practice.

Consumer food and nutrition combines courses in food science, nutrition, communications, economics, and public policy with a basic science curriculum that prepares students for graduate study or entry-level positions in government or industry education programs.

Consumer food science has a basic science curriculum emphasizing how composition and treatment of food affect food quality, safety, acceptability, and nutritive value. Students may enter graduate programs in food science or nutrition or find jobs in food analysis, quality control, or product development.

Dietetics requirements can be met under any option of the nutritional sciences major. To specialize in dietetics, students must complete courses under Basic Requirements for American Dietetic Association (ADA) membership plus the requirements of one area of specialization: general dietetics, management, clinical dietetics, or community nutrition. Central screening must be completed by all students seeking membership in ADA. This begins in the first semester of the senior year; March for January graduates; October for June graduates.

Details of the minimum requirements for the major and various concentrations as well as ADA requirements may be obtained from the division's Undergraduate Office, 335 Van Rensselaer Hall.

Students majoring in the division should consult with a division faculty member about concentrations and course selections for particular career interests. In general, more work will be necessary in the sciences and division courses for specific career goals than the minimum listed for a major.

Honors

The honors program offered by the division leads to a B.S. degree with honors in nutritional sciences. Students in the honors program are given the opportunity to do independent study. Criteria for selection of students include scholastic achievement in the sciences and professional courses, cumulative grade point average, and motivation for independent study. Decisions on admission to the program are made by a faculty committee near the end of the spring semester of the sophomore year. Other students, including students transferring into the division major at the junior level, will be considered for admission upon written request. The deadline for entry into the program is the beginning of the second semester of the junior year. A description of the program can be obtained from the division's Undergraduate Office or from the division's honors representative.

Academic Advising

When a student indicates a preference for the nutritional sciences major, a faculty adviser is assigned by the division advising coordinator. An effort is made to match the professional interests of student and adviser. The student is notified by letter of the appointment of an adviser; should the student's professional interests change, a different adviser can be sought. If a change is desired or notification is not received, the student should leave his or her name and area of interest in the Division's Undergraduate Office. Advising clinics are held during course registration to help students plan their program of study; consultation with a faculty adviser is strongly recommended.

Courses Recommended for Nonmajors

Courses in the division are open to all students of the University. For nonmajors, nutritional science courses strengthen preparation for careers in biological sciences, medicine, agriculture, and food science, as well as those related to human services such as education and social service.

Introductory courses in nutrition and food are available to the nonmajor, and those students who have fulfilled prerequisites in chemistry, biological sciences, and nutrition may elect advanced courses. Graduate students in other fields who would like basic work in nutrition should consult with a faculty member.

For the convenience of individuals or groups of students, the Learning Resources Center has space and equipment for use of audiotapes, slides, filmstrips, and videotapes. Titles of both general and technical resources range from food faddism, weight control, nutritional biochemistry to analytical methods. Students will find these materials useful to supplement classwork, for special projects, and for independent study. In cooperation with a faculty member, students may develop audiovisual presentations on a selected topic as an alternate learning experience.

The Center, 339 Martha Van Rensselaer Hall, is open weekdays for any student to use.

Questions about undergraduate programs in the Division of Nutritional Sciences can be addressed to Marjorie Devine, Associate Director for Academic Affairs.

Officer Education

Faculty and Staff

Department of Military Science

Lieutenant Colonel Gerard H., Luisi, Infantry, United States Army, Professor of Military Science and Commanding Officer, Army ROTC Unit

Major Joseph A. G. Roussos, Signal Corps, United States Army

Captain Larry W. Matthews, Quartermaster Corps, United States Army

Captain Donald Cranz, Armor, United States Army

Department of Naval Science

Captain T. H. Warren, United States Navy, Professor of Naval Science and Commanding Officer, Naval ROTC Unit

Commander Joseph M. Quigley, United States Navy

Major James M. Canario, United States Marine Corps

Lieutenant Robert E. Dolan, United States Navy

Lieutenant Paul E. Huck, United States Navy

Lieutenant Robert P. Perry, United States Navy

Lieutenant Clifford A. Nancarrow, United States Navy

Department of Aerospace Studies

Lieutenant Colonel Crosby A. Houston, United States Air Force, Professor of Aerospace Studies and Commander of the Air Force ROTC Detachment 520

Major John S. Levisky II, United States Air Force

Captain Andrew J. Ferencak, United States Air Force

Captain Wayne R. Williamson, United States Air Force

Officer Education at Cornell

Military instruction began at Cornell University under the provisions of the Morrill Act of 1862 in 1868. Since that time, officer education has been highlighted by the construction of Barton Hall in 1914, establishment of a formal Reserve Officers Training Corps Unit (ROTC) in 1916, and the evolution of a program that de-emphasizes drill and formations and places greater concern on the development of leadership and managerial skills. Throughout the years, Cornell's program of officer education has provided many outstanding civilian and military leaders, well equipped for success as a result of knowledge and skills gained from their involvement in ROTC while pursuing undergraduate and graduate degrees.

The programs of officer education allow the student to prepare for a commission as an officer in either the reserves or regular military services of the United States. The Army, Navy, Marines, and Air Force offer such opportunities and each service program is headed by a senior military officer who also serves as a full professor on the Cornell faculty.

United States Army ROTC Program

The primary objective of the Army ROTC (AROTC) program at Cornell is to develop and commission as junior officers, men and women who have the qualifications and potential for service as officers in the reserve and active components of the United States Army. Opportunities are also available to those men and women desiring a career in the military. Intermediate objectives are to provide AROTC students with an understanding of the fundamentals of responsibility, integrity, and self-discipline, as well as an appreciation of the citizen's role in national defense. The application of the decision-making process to a variety of situations is given major emphasis as a valuable aid in developing leadership potential.

These objectives are achieved through a program normally covering four years. However, a two-year program is available and is discussed later. The program includes specific courses in military science, more general academic subjects that assure a well-rounded education, practical training in leadership through participation in the Cadet Corps (including attendance at a six-week summer camp at an Army installation), and the opportunity to participate in a number of extracurricular activities. The combination prepares the student for commissioning and effective performance in any of the several branches of service of the Army. The student's academic major, academic performance, leadership ability, personal desires, and the needs of the Army determine the branch of the Army in which he or she is commissioned upon graduation.

Requirements for Enrolling

Applicants must be citizens of the United States. (Noncitizens may enroll and will receive certificates acknowledging completion of the course, but do not receive commissions.)

An applicant's vision must be correctible to a minimum of 20/20 in one eye and 20/400 in the other eye. Height must be at least 60 inches for men, 58 inches for women, and no more than 80 inches for men and 72 inches for women, although exceptions will be considered. The weight requirement varies according to height and sex. Overall sound mental and physical condition is essential and students are required to undergo periodic physical examinations.

Enrollment in the program is generally subject to the approval of the professor of military science. Enrollment approval for specific courses for students not formally enrolled in the program will be left with course instructors. Students not enrolled formally in the AROTC program will not be allowed to participate in the practical leadership laboratory. For more detailed information about the program offered by the Department of Military Science, see *Cornell University Announcements: Officer Education*.

United States Naval ROTC Program

The objective of the Naval ROTC program is to prepare selected students for service as commissioned officers in the United States Navy or United States Marine Corps by supplementing their undergraduate education with instruction in essential concepts of naval science and fostering development in the qualities of leadership, integrity, and dedication to their country and the naval service. The NROTC program is compatible with most undergraduate major fields of study, including five-year baccalaureate degree programs.

The objective is achieved through a broad program, normally covering four years, which combines specific

courses in naval science and specified academic subjects to supplement weekly laboratory sessions in which the practical aspects of naval science and leadership procedures are stressed. The program also includes at least one summer-at-sea period.

Non-NROTC Students

Though the Navy program has been designed to prepare future officers, Navy courses are open to all students at Cornell University as space limitations allow.

Requirements for Enrollment

An applicant for Naval ROTC at Cornell must be a citizen of the United States. Applicants must have reached their seventeenth birthday by June 30th of the entering year and be less than twenty-five years of age on June 30th of the calendar year in which commissioned. Waivers of the upper age limit may be granted on an individual basis by the Chief of Naval Personnel up to age twenty-seven and one-half on June 30th of the year in which commissioned. Applicants must also meet physical and medical requirements. Interested students should visit the Naval ROTC unit in Barton Hall. For more detailed information about the programs offered by the Department of Naval Science, see *Cornell University Announcements: Officer Education.*

United States Air Force ROTC Program

The objective of the AFROTC program at Cornell is to prepare highly trained men and women for positions as officers in the United States Air Force. The program is designed to provide the student with a background of aerospace knowledge and to further develop qualities of leadership, integrity, and self-discipline.

The objectives are achieved through four-year and two-year programs. These programs include specific courses in aerospace studies and practical laboratories.

Entering students are assigned to one of four categories: flying (pilot-navigator), missile, engineering-science, and general service. These assignments are based on the student's preferences, qualifications, academic field of study, and the needs of the Air Force.

Requirements for Enrollment

The Air Force ROTC program is open to any undergraduate or graduate student enrolled in any major field of study. The student's academic course of study is often a prime factor in determining the kind of career that may be pursued in the Air Force.

Applicants must be citizens of the United States. (Noncitizens may enroll and will receive certificates acknowledging completion of the course, but do not receive commissions.)

Though the Air Force program has been designed to prepare future officers, Air Force courses are open to all students at Cornell University as space limitations allow.

Physical

All applicants receive physical examinations at no cost and, to be accepted, must meet the physical requirements listed below. Overall sound physical and mental condition is essential.

Every applicant must be free from any limiting physical infirmity and must have normal hearing, blood pressure, and heartbeat. Weight must be normal for height and age.

Following are the additional specific requirements for nonflying categories.

Vision: bilateral distant vision without corrective lenses, at least 20/400.
Height for men: at least 60 but not more than 80 inches; height for women: at least 58 but not more than 72 inches.
Allergy: no history of asthma since twelfth birthday.
Dental health: good.

Those students who are interested in qualifying for flying categories (pilot/navigator) must meet the following specific requirements:

Vision (for pilot candidates): 20/20 bilateral near and far vision without corrective lenses; (for navigator candidates): bilateral near vision at least 20/20 without corrective lenses and bilateral far vision at least 20/70 without correction, providing it is correctable to 20/20 with lenses.
Color vision: normal.
Height: at least 64 but not more than 76 inches; sitting height not more than 39 inches.
Allergy: no history of asthma or hay fever since twelfth birthday.
Dental health: good.

For more detailed information about the program offered by the Department of Aerospace Studies, see *Cornell University Announcements: Officer Education.*

Physical Education

Although courses are listed under Men's Physical Education and Women's Physical Education both men and women may register for any course in either department (with the exception of the swimming course offered by Men's Physical Education). Enrollment is limited by the number of places in each class and the locker space available; other restrictions are included in the course descriptions.

Women's Physical Education

Registration

Registration for courses in Women's Physical Education is not part of course or University registration. Students register at Helen Newman Hall during the first week of classes, unless the course description states otherwise.

Instruction in physical education starts the third week of the academic semester. Courses offered "fall" or "spring" begin the third week of the semester and continue through the last week of academic instruction. Courses offered "fall I," "fall II," "spring I" or "spring II" are given in six-week units. The calendar below shows when they are offered.

Calendar

Fall

Registration	September 4–8
Fall I classes begin	September 18
Fall II classes begin	October 30
Fall classes end	December 8

Spring

Registration	January 22–26
Spring I classes begin	February 5
Spring II classes begin	March 26
Spring classes end	May 4

Men's Physical Education

Registration

Registration for courses in Men's Physical Education is not part of course or University registration. Students register in the Teagle Hall gym on the dates listed on the calendar below, unless the course description states otherwise. Contact the Physical Education Office, Teagle Hall, to find out which hours registration will be held.

Instruction in physical education starts the third week of the academic semester and continues through the last week of classes.

Calendar

Fall

Registration	September 1, 4–6
Classes begin	September 18
Classes end	December 8

Spring

Registration	January 19, 22–24
Classes begin	February 5
Classes end	May 4

Division of Unclassified Students

The Division of Unclassified Students is designed to assist those students who are or have been enrolled in one undergraduate division at Cornell and wish to transfer to another program within the University but who may not make a direct internal transfer. Students whose best interests may be served by transferring to another institution but who need credits in specific areas or an opportunity to achieve better grades in courses not offered by the unit of the University they are presently enrolled in may also be considered. Admission is for one term. A second term may be granted on petition if satisfactory progress is being made toward transfer. The Division office is in 375 Olin Hall, telephone 256-4386.

New York State College of Veterinary Medicine

Administration

Edward C. Melby, Jr., Dean

Charles G. Rickard, Associate Dean for Academic Programs

Lennart P. Krook, Associate Dean for Postdoctoral Education

Alvin F. Sellers, Associate Dean for Research

Neil L. Norcross, Secretary of the College

Robert B. Brown, Director of Student Administration

Daniel N. Tapper, Coordinator of Minority Programs

Ann Marcham, Director of Personnel and Assistant to the Dean

Robert K. Radziwon, Assistant to the Dean

Edward J. Trethaway, Assistant to the Dean for Public Affairs

Clyde I. Boyer, Jr., Director of Laboratory Animal Medicine and Service

The College

The College of Veterinary Medicine offers a professional program which requires four years of full-time academic and clinical study of the normal and abnormal structure and function of the animal body and the diagnosis, treatment, and prevention of animal disease.

Graduates of the College receive the Doctor of Veterinary Medicine (D.V.M.) degree, which is recognized by licensing boards throughout the world. Graduates generally enter private practice or become engaged in an increasing number of other biomedical activities.

Admission requires a minimum of three years of college work, including specific prerequisite courses and experience. In exceptional cases, outstanding students who have completed all of the prerequisites in two years of undergraduate education may be considered for admission. Applications must be filed approximately one year before the proposed matriculation date. The competition for admission is keen since there are many more qualified applicants than can be admitted.

Graduate programs in veterinary research and postdoctoral training in clinical specialties are open to Doctors of Veterinary Medicine and some highly qualified holders of baccalaureate degrees, and lead to the degree of Master of Science, Doctor of Science in Veterinary Medicine, or Doctor of Philosophy.

More detailed information is contained in the *Announcement of the College of Veterinary Medicine*, which may be obtained by writing to the College.

Business and Preprofessional Study

Undergraduate Business Study

Undergraduate study and preparation for business are found in many different schools and colleges at Cornell. Students most frequently take courses in more than one area, as well as in related fields, to construct a program to suit individual interests and career objectives. Each of the following areas provides a different focus for application and use of business study and training, and students should consider carefully the specific implications of each program when making a choice. (Graduate study is available in the Graduate School of Business and Public Administration as well as in graduate fields following each of the undergraduate options.) The areas most often pursued include:

applied economics and business management (Agriculture and Life Sciences)
economics (Arts and Sciences)
engineering
hotel administration
consumer economics and public housing (Human Ecology)
industrial and labor relations

Applied economics and business management provides instruction appropriate for both agricultural and nonagricultural use. Economics, marketing, finance, public affairs management, food industry management, resources management, and distribution processes are examples of specific areas available. There is greater emphasis on the application of these areas and less on the theoretical aspects of economic theory and money, currency, and banking. (These subjects would be more easily pursued in the Department of Economics.)

Economics provides a broad view of that social science concerned with the description and analyses of the production, distribution, and consumption of goods and services, the understanding of monetary systems, and the comprehension of economic theories and models. It is more often viewed as preprofessional than as training for immediate practice in business or economics.

Engineering is an area of professional study that provides much of the management personnel of modern industry. Engineers frequently climb the ladders of technological management, which then lead to more general management responsibilities — more than half of the management-level personnel of major corporations such as General Electric, Xerox, IBM, and DuPont have engineering degrees. In addition to becoming managers by being effective technical supervisors, many students enter engineering explicitly anticipating graduate business education, judging that an engineering background is particularly appropriate for management in a technology-oriented society.

Operations research and industrial engineering, one of the specific engineering departments, is particularly appropriate for those anticipating a business management career. The curriculum focuses on the design of integrated, cost-effective systems of people, materials, and equipment for manufacturing industries, public and private service organizations, and consulting firms.

Hotel administration is an undergraduate program that provides managers for the hospitality industry. Capability for management of motels, hotels, condominiums, restaurants, clubs, hospitals, and land and facility development is developed through instruction in personnel and general administration, financial management, food and beverage service, and communications. Students interested in the School of Hotel Administration must have developed an explicit awareness of and commitment to this area through work experience, reading, study, and discussions with industry representatives.

Consumer economics and housing has a particular focus on the economic behavior and welfare of consumers in the private, public, and mixed sectors of the economy, and has an option for special concentration on housing. It aims at the understanding of economics, sociology, and government policy as they apply to consumer problems.

Industrial and labor relations involves the study of the world of work, especially the employee-employer relationship in the broadest sense, including the political, social, and economic forces affecting that relationship. Graduates can pursue immediate employment in industry, government, and labor organizations, or choose graduate study in the ILR field or such related fields as law and business and public administration.

Related Areas

In addition to the major business programs, courses in directly related areas are found in many of the University departments. For example, quantitative methods may be studied in the Departments of Mathematics and Computer Science; courses in public administration are found in the Departments of Government and City and Regional Planning. There are additional special programs that allow students with an interest in business to focus their study on a particular geographic area. Examples are the Latin American Studies Program, the South Asia Program, and the Africana Studies and Research Center. Such interdisciplinary programs as Science, Technology, and Society and the various programs in international agriculture provide additional opportunities for study of interest to business students.

Combined Degree Programs

Because Cornell does have a Graduate School of Business and Public Administration, there exists here a special opportunity for highly qualified undergraduates to combine their undergraduate program with graduate study in that school. Students in such a combined degree program generally receive a bachelor's degree after four years of study and a Master of Business Administration, Master of Public Administration, or Master of Professional Studies (Hospital and Health Services Administration) degree after the fifth year of study, rather than the normal sixth year. Admission to these combined degree programs is limited to particularly promising candidates, and careful planning is required for successful integration of the work of the two degree programs.

Prelaw Study

Law schools do not prescribe any particular prelaw program; nor do they require any specific undergraduate courses as do medical schools. Law touches nearly every phase of human acitivity and there is practically no subject that can be considered to be of no value to the lawyer and no undergraduate course of study that can be judged as totally inappropriate. Prelaw students should, however, be guided by certain principles when selecting college courses.

1) Pursue personal intellectual interests. Interest encourages scholarship, and students will derive the greatests benefit from those studies that stimulate their interest.

2) Attempt to develop precision of thought. Of first importance to the lawyer is the ability to express thoughts clearly and cogently, both in speech and in writing. Courses in the Freshman Seminar Program, required of nearly all Cornell freshmen, are especially designed to develop these skills. English literature and composition and communication arts courses also serve this purpose. Logic and mathematics develop exactness of thought. Also of value are economics, history, government, and sociology, because of their close relation to law and their influence upon its development; ethics, because of its kinship to guiding legal principles; and philosophy, because of the influence of philosophic reasoning upon legal reasoning and jurisprudence. Psychology leads to an understanding of human nature and mental behavior. Some knowledge of the principles of accounting and of the sciences, such as chemistry, physics, biology, and engineering, is recommended and will prove of practical value to the lawyer in general practice in the modern world.

3) Study cultural subjects that, though they may have no direct bearing upon law or a legal career, will expand students' interests, help to cultivate a wider appreciation of literature, art, and music, and make better educated and well-rounded persons.

4) Consider the special utility of certain subjects to specialized legal careers. For some, a broad scientific background — for example in agriculture, chemistry, physics, or engineering — when coupled with training in law, may furnish particular qualifications necessary for specialized work with the government, counseling certain types of businesses, or for a career as a patent lawyer. A business background may be helpful for those planning to specialize in corporate or tax practice. Students who anticipate practice involving labor law and legislation might consider undergraduate study in the School of Industrial and Labor Relations. But whatever course of study you choose at Cornell, the important tasks are to acquire perspective, social awareness, and a critical cast of mind; to develop the ability to think logically and analytically and to express your thoughts clearly and forcefully. These are the crucial tools for a sound legal education and successful career.

Dual Registration

The presence of the Cornell Law School on campus provides the opportunity for a limited number of highly qualified undergraduates registered in the College of Arts and Sciences at the University to be admitted to the Law School. At the time of entry they must have completed 105 of the 120 hours required for the A.B. degree, including 92 hours of courses in the College of Arts and Sciences.

Premedical Study

Medical and dental schools, while not prescribing any particular major course of study, do require that a particular selection of undergraduate courses be completed. These requirements include one year of general chemistry and one year of organic chemistry, one year of biology, one year of English composition or a Freshman Seminar course. In addition, those premedical students who elect a nonscience major, are advised to take at least one advanced biological science course, such as genetics, embryology, histology, or physiology.

There is no "best" major program for those considering medical or dental school, and students are therefore encouraged to pursue their own intellectual interests. Students are more likely to succeed at and benefit from subjects that interest and stimulate them and there is no evidence that medical colleges give special consideration to any particular undergraduate training beyond completion of the required courses. In the past at Cornell, most successful applicants to medical and dental schools have been enrolled primarily in the Colleges of Arts and Sciences and Agriculture and Life Sciences, with some also in the Colleges of Engineering and Human Ecology. The appropriate choice depends to a great extent upon the student's other interests.

Health Careers Advisory Office

Cornell provides guidance and advice for premedical, predental, and other health career students through its Health Careers Advisory Office. Students are encouraged to contact that office whenever they have determined their interest in a health profession. In addition to general advising, this office also sponsors the Health Careers Advisory Committee, a faculty committee that participates in formulating a composite letter of recommendation for each student who applies to medical or dental schools, supporting his or her applications.

Dual Registration Programs

Qualified students in the Colleges of Agriculture and Life Sciences and Arts and Sciences may apply for acceptance into a dual registration program arranged between Cornell University and the Upstate College of Medicine at Syracuse. Students from these two colleges and the College of Human Ecology are eligible for a similar program arranged with the Cornell Medical College in New York City. Both programs allow registered students to save one year in pursuit of the bachelor's and M.D. degrees. Further information about these programs is available from the Health Careers Advisory Office.

Preveterinary Study

There is no specific preveterinary program at Cornell and students interested in veterinary medicine as a career objective should select an area for study that fits their interests while at the same time meeting the entrance requirements for veterinary college listed below. Most prevet students enroll in the College of Agriculture and Life Sciences. However, because of the statutory nature of that division, out-of-state candidates will find it extremely difficult to gain acceptance into the biological sciences or animal sciences program of that college. Others, because of their secondary interests or desire for a broader undergraduate curriculum, often enter other divisions of the University, especially the College of Arts and Sciences.

The college-level prerequisite courses for admission to the New York State College of Veterinary Medicine at Cornell are: one year each of English, biology, physics, and general chemistry; six credits of organic chemistry; four credits of biochemistry; and three credits of microbiology. All science courses must include a laboratory. The College also requires demonstrated proficiency in written and

spoken English and encourages college-level work in mathematics. These requirements, necessary for admission to the Cornell College of Veterinary Medicine, may vary slightly among other veterinary colleges.

For information on additional preparation, including work experience and necessary examinations, students should consult the *Announcement of the College of Veterinary Medicine.*

University Roster

The following roster lists faculty who constitute the voting membership* of the University faculty. The list is in alphabetical order by college and includes the highest degree, the institution granting such degree, the title, and the department or area of specialization of each faculty member. Professors-at-large are listed separately at the end.

The cutoff date used to compile this information was July 1, 1978.

Africana Studies and Research Center

Cross, William E., Ph.D., Princeton U. Asst. Prof., Africana Studies & Research Center

Fontenot, Chester J., Ph.D., U. of California at Irving. Asst. Prof., Africana Studies & Research Center

Harris, Robert L., Ph.D., Northwestern U. Asst. Prof., Africana Studies & Research Center

Mbata, J. Congress, U.E.D., U. of South Africa. Assoc. Prof., Africana Studies & Research Center

Murapa, Rukudzo, Ph.D., U. of Illinois. Assoc. Prof., Africana Studies & Research Center

Turner, James E., Ph.D., Union Grad. Sch. at Antioch Coll. Assoc. Prof., Africana Studies & Research Center

*"The voting members of the University Faculty shall consist of the President, who shall be the presiding officer, emeritus professors, University professors, professors-at-large in residence, and all professors, associate professors and assistant professors of the several colleges, schools and separate academic departments, divisions, and centers at Ithaca and Geneva, including those with courtesy appointments as authorized by these Bylaws."

New York State College of Agriculture and Life Sciences

Abawi, George S., Ph.D., Cornell U. Assoc. Prof., Plant Pathology (Geneva)

Acree, Terry E., Ph.D., Cornell U. Assoc. Prof., Food Science & Technology (Geneva)

Adleman, Marvin I., M.L.A., Harvard U. Assoc. Prof., Floriculture & Ornamental Horticulture

Ainslie, Harry R., Ph.D., Kansas State U. Prof., Animal Science

Aist, James R., Ph.D., U. of Wisconsin. Assoc. Prof., Plant Pathology

Albright, Louis D., Ph.D., Cornell U. Asst. Prof., Agricultural Engineering

Aldwinckle, H. S., Ph.D., U. of London. Assoc. Prof., Plant Pathology (Geneva)

Alexander, Martin, Ph.D., U. of Wisconsin. Liberty Hyde Bailey Professor of Soil Science, Agronomy

Allee, David J., Ph.D., Cornell U. Prof., Agricultural Economics

Anderson, Ronald E., Ph.D., U. of Wisconsin. Assoc. Prof., Plant Breeding & Biometry

Andrus, Howard G., Ph.D., Cornell U. Prof., Education

Apgar, Barbara J., Ph.D., Cornell U. Asst. Prof., Animal Science

Aplin, Richard D., Ph.D., Cornell U. Prof., Agricultural Economics

Arneson, Phil A., Ph.D., U. of Wisconsin. Assoc. Prof., Plant Pathology

Arnold, Richard W., Ph.D., Iowa State U. Prof., Agronomy

Austic, Richard E., Ph.D., U. of California at Davis. Assoc. Prof., Poultry Science

Awa, Njoku E., Ph.D., Cornell U. Assoc. Prof., Communication Arts

Baer, Richard A., Ph.D., Harvard U. Assoc. Prof., Natural Resources

Bail, Joe P., Ph.D., Michigan State U. Prof., Education

Baker, Robert C., Ph.D., Purdue U. Prof., Poultry Science

Bandler, David K., M.P.S., Cornell U. Asst. Prof., Food Science

Barker, Randolph, Ph.D., Iowa State U. Prof., Agricultural Economics

Barnett, Milton L., Ph.D., Cornell U. Prof., Rural Sociology

Barton, Donald W., Ph.D., U. of California at Berkeley. Prof., Seed & Vegetable Sciences (Geneva)

Barwind, Jack A., Ph.D., Bowling Green U. Assoc. Prof., Communication Arts

Bateman, Durward F., Ph.D., Cornell U. Prof., Plant Pathology

Bauder, Ward W., Ph.D., Cornell U. Prof., Rural Sociology

Beer, Steven V., Ph.D., U. of California at Davis. Assoc. Prof., Plant Pathology

Berkey, Arthur L., Ph.D., Michigan State U. Assoc. Prof., Education

Bills, Nelson L., Ph.D., Washington State U. Asst. Prof., Agricultural Economics

Bing, Arthur, Ph.D., Cornell U. Prof., Floriculture & Ornamental Horticulture

Black, Richard D., Ph.D., U. of Illinois. Assoc. Prof., Agricultural Engineering

Blandford, David, Ph.D., Manchester U. Asst. Prof., Agricultural Economics

Blanpied, G. D., Ph.D., Michigan State U. Prof., Pomology
Bloom, Stephen E., Ph.D., Penn State U. Assoc. Prof., Poultry Science
Boisvert, Richard N., Ph.D., U. of Minnesota. Assoc. Prof., Agricultural Economics
Boodley, James W., Ph.D., Penn State U. Prof., Floriculture & Ornamental Horticulture
Boothroyd, Carl W., Ph.D., Cornell U. Prof., Plant Pathology
Bouldin, David R., Ph.D., Iowa State U. Prof., Agronomy
Bourke, John B., Ph.D., Oregon State U. Assoc. Prof., Food Science & Technology (Geneva)
Bourne, Malcolm C., Ph.D., U. of California at Davis. Prof., Food Science & Technology (Geneva)
Bowers, William S., Ph.D., Purdue U. Prof., Entomology (Geneva)
Brannon, Warren F., Ph.D., Cornell U. Assoc. Prof., Animal Science
Bratton, C. Arthur, Ph.D., Cornell U. Prof., Agricultural Economics
Broadwell, George J., Ph.D., Cornell U. Assoc. Prof., Cooperative Extension
Brodie, Bill B., Ph.D., North Carolina State U. Prof., Plant Pathology
Brown, Earl H., Ph.D., Michigan State U. Prof., Agricultural Economics
Brown, William L., Jr., Ph.D., Harvard U. Prof., Entomology
Bruce, Robert L., Ph.D., Cornell U. Prof., Education
Brumsted, Harlan B., Ph.D., Cornell U. Assoc. Prof., Natural Resources
Brunk, Max E., Ph.D., Cornell U. Prof., Agricultural Economics
Bugliari, Joseph B., L.L.B., Cornell U. Prof., Agricultural Economics
Burr, Thomas J., Ph.D., U. of California at Berkeley. Asst. Prof., Plant Pathology (Geneva)
Butler, Walter R., Ph.D., Purdue U. Asst. Prof., Animal Science
Buttel, Frederick H., Ph.D., U. of Wisconsin. Asst. Prof., Rural Sociology
Cady, Foster B., Ph.D., North Carolina State U. Prof., Plant Breeding & Biometry
Call, David L., Ph.D., Cornell U. Prof., Agricultural Economics
Campbell, Joseph K., M.S., Cornell U. Assoc. Prof., Agricultural Engineering
Capener, Harold R., Ph.D., Cornell U. Prof., Rural Sociology
Casler, George L., Ph.D., Purdue U. Prof., Agricultural Economics
Cetas, Robert C., Ph.D., Cornell U. Prof., Plant Pathology
Chaleff, Roy S., Ph.D., Yale U. Asst. Prof., Plant Breeding & Biometry
Chapman, Lewis D., Ph.D., U. of California at Berkeley. Assoc. Prof., Agricultural Economics
Chase, Larry E., Ph.D., Penn State U. Asst. Prof., Animal Science
Clark, Benjamin E., Ph.D., Michigan State U. Prof., Seed & Vegetable Sciences (Geneva)
Colle, Royal D., Ph.D., Cornell U. Prof., Communication Arts
Combs, Gerald F., Jr., Ph.D., Cornell U. Asst. Prof., Poultry Science
Conklin, Howard E., Ph.D., Cornell U. Prof., Agricultural Economics
Conneman,George J., Ph.D., Penn State U. Prof., Agricultural Economics
Conrad, Jon M., Ph.D., U. of Wisconsin. Asst. Prof., Agricultural Economics
Cooke, J. Robert, Ph.D., North Carolina State U. Prof., Agricultural Engineering
Coward, E. Walter, Ph.D., Iowa State U. Assoc. Prof., Rural Sociology
Crawford, Robert H., Ph.D., Syracuse U. Assoc. Prof., Communication Arts
Creasy, Leroy L., Ph.D., U. of California at Davis. Prof., Pomology
Crowder, Loy V., Ph.D., Cornell U. Prof., Plant Breeding & Biometry
Cummings, Gordon J., Ph.D., Cornell U. Prof., Rural Sociology
Cummins, James N., Ph.D., Southern Illinois U. Assoc. Prof., Pomology & Viticulture (Geneva)
Cunningham, Danis, Ph.D., Virginia Polytechnic Inst. Asst. Prof., Poultry Science
Cupp, Eddie W., Ph.D., U. of Illinois. Assoc. Prof., Entomology
Curtis, Otis F., Jr., Ph.D., Cornell U. Assoc. Prof., Pomology & Viticulture (Geneva)
Cushman, Harold R., Ph.D., Cornell U. Prof., Education
Davis, Alexander C., Ph.D., Cornell U. Prof., Entomology (Geneva)
Day, Lee M., Ph.D., U. of Minnesota. Prof., Agricultural Economics
Delwiche, E. A., Ph.D., Cornell U. Prof., Microbiology
Dethier, Bernard E., Ph.D., Johns Hopkins U. Prof., Agronomy
Dewey, James E., Ph.D., Cornell U. Prof., Entomology
Dickey, Robert S., Ph.D., U. of California at Berkeley. Prof., Plant Pathology
Dickson, Michael H., Ph.D., Michigan State U. Prof., Seed & Vegetable Sciences (Geneva)
Dietert, Rodney R., Ph.D., U. of Texas at Austin. Asst. Prof., Poultry Science
Dolan, Desmond D., Ph.D., Cornell U. Assoc. Prof., Seed & Vegetable Sciences (Geneva)
Dondero, Norman C., Ph.D., Cornell U. Prof., Microbiology
Downes, Theron W., Ph.D., Rutgers U. Asst. Prof., Food Science
Downing, Donald L., Ph.D., U. of Georgia. Assoc. Prof., Food Science & Technology (Geneva)
Drake, William E., Ph.D., Michigan State U. Prof., Education
Duke, William B., Ph.D., U. of Illinois. Assoc. Prof., Agronomy
Dunn, James A., Ph.D., U. of Michigan. Prof., Education
Duxbury, John M., Ph.D., U. of Birmingham. Assoc. Prof., Agronomy
Earle, Wendell G., Ph.D., Cornell U. Prof., Agricultural Economics
Eaton, Edward O., Ph.D., Cornell U. Prof., Agricultural Engineering
Eberts, Paul R., Ph.D., U. of Michigan. Assoc. Prof., Rural Sociology

Eckenrode, Charles J., Jr., Ph.D., U. of Wisconsin. Assoc. Prof,, Entomology (Geneva)
Edgerton, Louis J., Ph.D., Cornell U. Prof., Pomology
Egner, Joan R., Ed.D., Cornell U. Prof., Education
Eickwort, George C., Ph.D., U. of Kansas. Prof., Entomology
Elfving, Donald C., Ph.D., U. of California at Riverside. Assoc. Prof., Pomology
Elliot, John M., Ph.D., Cornell U. Prof., Animal Science
Erickson, Eugene C., Ph.D., Michigan State U. Prof., Rural Sociology
Everett, Herbert L., Ph.D., Yale U. Prof., Plant Breeding & Biometry
Everett, Robert W., Ph.D., Michigan State U. Assoc. Prof., Animal Science
Everhart, W. Harry, Ph.D., Cornell U. Prof., Natural Resources
Ewing, Elmer E., Ph.D., Cornell U. Prof., Vegetable Crops
Federer, Walter T., Ph.D., Iowa State U. Prof., Plant Breeding & Biometry
Fick, Gary W., Ph.D., U. of California at Davis. Assoc. Prof., Agronomy
Fiori, Bart J., Ph.D., Cornell U. Assoc. Prof., Entomology (Geneva)
Fischer, Charles C., M.S., Michigan State U. Assoc. Prof., Floriculture & Ornamental Horticulture
Fischer, Richard B., Ph.D., Cornell U. Prof., Education
Fisher, Dennis U., Ph.D., Michigan State U. Asst. Prof., Agricultural Economics
Foote, Robert H., Ph.D., Cornell U. Prof., Animal Science
Forker, Olan D., Ph.D., U. of California at Berkeley. Prof., Agricultural Economics
Forshey, Chester G., Ph.D., Ohio State U. Prof., Pomology & Viticulture (Geneva)
Foss, Edward W., M.S.A., Cornell U. Prof., Agricultural Engineering
Fox, Danny G., Ph.D., Ohio State U. Assoc. Prof., Animal Science
Fox, Raymond T., Ph.D., Cornell U. Assoc. Prof., Floriculture & Ornamental Horticulture
Francis, Joe D., Ph.D., U. of Missouri. Assoc. Prof., Rural Sociology
Freebairn, Donald K., Ph.D., Cornell U. Assoc. Prof., Agricultural Economics
Freeman, Chester H., M.S.A., Cornell U. Prof., Communication Arts
Fry, William E., Ph.D., Cornell U. Assoc. Prof., Plant Pathology
Furry, Ronald B., Ph.D., Iowa State U. Prof., Agricultural Engineering
Geiselmann, Harrison A., Ph.D., Cornell U. Prof., Education
Gilpatrick, John D., Ph.D., U. of California at Berkeley. Assoc. Prof., Plant Pathology (Geneva)
Glass, Edward H., Ph.D., Ohio State U. Prof., Entomology (Geneva)
Gonsalves, Dennis, Ph.D., U. of California at Davis. Assoc. Prof., Plant Pathology (Geneva)
Good, George L., Ph.D., Cornell U. Assoc. Prof., Floriculture & Ornamental Horticulture
Goodrich, Dana C., Ph.D., Cornell U. Prof., Agricultural Economics
Gorewit, Ronald C., Ph.D., Michigan State U. Asst. Prof., Animal Science
Gortzig, Carl F., Ph.D., Michigan State U. Prof., Floriculture & Ornamental Horticulture
Gowin, Dixie B., Ph.D., Yale U. Prof., Education
Gracen, Vernon E., Jr., Ph.D., U. of Florida. Assoc. Prof., Plant Breeding & Biometry
Graham, Donald C., Ph.D., Cornell U., Assoc. Prof., Food Science
Gregory, Peter, Ph.D., Kings Coll. Asst. Prof., Plant Breeding & Biometry
Grunes, David L., Ph.D., U. of California at Berkeley. Prof., Agronomy
Guest, Richard W., M.S., North Dakota Coll. Assoc. Prof., Agricultural Engineering
Gunkel, Wesley W., Ph.D., Michigan State U. Prof., Agricultural Economics
Gutierrez, Ralph J., Ph.D., U. of California at Berkeley. Asst. Prof., Natural Resources
Gyrisco, George G., Ph.D., Cornell U. Prof., Entomology
Hackler, Lonnie R., Ph.D., U. of Illinois. Assoc. Prof., Food Science & Technology (Geneva)
Hagedorn, Henry H., Ph.D., U. of California at Davis. Assoc. Prof., Entomology
Haith, Douglas A., Ph.D., Cornell U. Assoc. Prof., Agricultural Engineering
Haller, Emil J., Ph.D., U. of Chicago. Assoc. Prof., Education
Hamilton, Lawrence S., Ph.D., U. of Michigan. Prof., Natural Resources
Hang, Yong D., Ph.D., McGill U. Asst. Prof., Food Science & Technology (Geneva)
Harman, Gary E., Ph.D., Oregon State U. Assoc. Prof., Seed & Vegetable Sciences (Geneva)
Harrison, Martin B., Ph.D., Cornell U. Assoc. Prof., Plant Pathology
Hedlund, Dalva E., Ph.D., Colorado State U. Assoc. Prof., Education
Helgesen, Robert G., Ph.D., Michigan State U. Assoc. Prof., Entomology
Hicks, James R., Ph.D., U. of Maryland. Asst. Prof., Vegetable Crops
Hintz, Harold F., Ph.D., Cornell U. Assoc. Prof., Animal Science
Hoch, Harvey, Ph.D., U. of Wisconsin. Asst. Prof., Plant Pathology
Hogue, Douglas E., Ph.D., Cornell U. Prof., Animal Science
Hood, Lamartine F., Ph.D., Penn State U. Assoc. Prof., Food Science
Horst, R. Kenneth, Ph.D., Ohio U. Assoc. Prof., Plant Pathology
How, Richard B., Ph.D., Cornell U. Prof., Agricultural Economics
Hrazdina, Geza, Ph.D., Eidg. Technische Hoschschule at Zürich. Assoc. Prof., Food Science & Technology (Geneva)
Hudler, George W., Ph.D., Colorado State U. Asst. Prof., Plant Pathology

Hunter, James E., Ph.D., U. of New Hampshire. Assoc. Prof., Plant Pathology (Geneva)

Irish, Wilmont W., M.S., U. of Illinois. Assoc. Prof., Agricultural Engineering

Irwin, Lynne H., Ph.D., Texas A & M U. Assoc. Prof., Agricultural Engineering

Jensen, Neal F., Ph.D., Cornell U. Liberty Hyde Bailey Professor of Plant Breeding, Plant Breeding & Biometry

Jewell, William J., Ph.D., Stanford U. Assoc. Prof., Agricultural Engineering

Jewett, Donald L., M.S., Michigan State U. Assoc. Prof., Cooperative Extension

Johnson, Thomas H., M.L.A., Harvard U. Asst. Prof., Floriculture & Ornamental Horticulture

Johnson, Warren T., Ph.D., U. of Maryland. Prof., Entomology

Jones, Edward D., Ph.D., U. of Wisconsin. Prof., Plant Pathology

Jordan, William K., Ph.D., Cornell U. Prof., Food Science

Kalter, Robert J., Ph.D., U. of Wisconsin. Prof., Agricultural Economics

Kelley, John W., Ph.D., Cornell U. Assoc. Prof., Natural Resources

Kelly, William C., Ph.D., Cornell U. Prof., Vegetable Crops

Kender, Walter J., Ph.D., Rutgers U. Prof., Pomology & Viticulture (Geneva)

Kennedy, W. Keith, Ph.D., Cornell U. Prof., Agronomy

Khan, Anwar A., Ph.D., U. of Chicago. Assoc. Prof., Seed & Vegetable Sciences (Geneva)

Kinsella, John E., Ph.D., Penn State U. Prof., Food Science

Knapp, Warren W., Ph.D., U. of Wisconsin, Assoc. Prof., Agronomy

Knapp, Wayne R., Ph.D., Purdue U. Asst. Prof., Agronomy

Knoblauch, Wayne A., Ph.D., Michigan State U. Asst. Prof., Agricultural Economics

Korf, Richard P., Ph.D., Cornell U. Prof., Plant Pathology

Kosikowski, Frank V., Ph.D., Cornell U. Prof., Food Science

Kramer, John P., Ph.D., U. of Illinois. Prof., Entomology

Kubota, Joe, Ph.D., U. of Wisconsin. Prof., Agronomy

Kuhr, Ronald J., Ph.D., U. of California at Berkeley. Prof., Entomology

LaBelle, Robert L., B. Chem. E., Cornell U. Prof., Food Science & Technology (Geneva)

LaDue, Eddy L., Ph.D., Michigan State U. Assoc. Prof., Agricultural Economics

Lakso, Alan N., Ph.D., U. of California at Davis. Asst. Prof., Pomology & Viticulture (Geneva)

Lamb, Robert C., Ph.D., U. of Michigan. Assoc. Prof., Pomology & Viticulture (Geneva)

Lambert, Robert J., Jr., M.S., U. of Michigan. Prof., Floriculture & Ornamental Horticulture

Langhans, Robert W., Ph.D., Cornell U. Prof., Floriculture & Ornamental Horticulture

Lassoie, James P., Ph.D., U. of Washington. Asst. Prof., Natural Resources

Lathwell, Douglas J., Ph.D., Ohio State U. Prof., Agronomy

Lawrence, James E., M.S., Syracuse U. Assoc. Prof., Communication Arts

Lechner, Fred G., Ed.D., Michigan State U. Assoc. Prof., Agricultural Engineering

Ledford, Richard A., Ph.D., Cornell U. Assoc. Prof., Food Science

Lee, Chang Y., Ph.D., Utah State U. Assoc. Prof., Food Science & Technology (Geneva)

Leeper, John R., Ph.D., U. of Hawaii. Asst. Prof., Entomology (Geneva)

Lemon, Edgar R., Ph.D., Michigan State U. Prof., Agronomy

Lesser, William, Ph.D., U. of Wisconsin. Asst. Prof., Agricultural Economics

Levine, Gilbert, Ph.D., Cornell U. Prof., Agricultural Engineering

Lieberman, Arthur S., M.S., Cornell U. Prof., Floriculture & Ornamental Horticulture

Lienk, Siegfried E., Ph.D., U. of Illinois. Prof., Entomology (Geneva)

Linscott, Dean L., Ph.D., U. of Nebraska. Prof., Agronomy

Lisk, Donald J., Ph.D., Cornell U. Prof., Food Science

Liu, Frank W., Ph.D., Cornell U. Asst. Prof., Pomology

Loehr, Raymond C., Ph.D., U. of Wisconsin. Prof., Agricultural Engineering/Engineering

Lorbeer, James W., Ph.D., U. of California at Berkeley. Prof., Plant Pathology

Lorenzen, Robert T., M.S., U. of California at Davis. Assoc. Prof., Agricultural Engineering

Lowe, Carl C., Ph.D., Cornell U. Prof., Plant Breeding & Biometry/Biological Sciences

Lucey, Robert F., Ph.D., Michigan State U. Prof., Agronomy

Ludford, Pamela M., Ph.D., Cornell U. Asst. Prof., Vegetable Crops

Ludington, David C., Ph.D., Purdue U. Assoc. Prof., Agricultural Engineering

McBride, Murray B., Ph.D., Michigan State U. Asst. Prof., Agronomy

McConkie, George W., Ph.D., Stanford U. Prof., Education

McDowell, Robert E., Ph.D., U. of Maryland. Prof., Animal Science

McNeil, Richard J., Ph.D., U. of Michigan. Assoc. Prof., Natural Resources

Mai, William F., Ph.D., Cornell U. Prof., Plant Pathology

Malecki, Richard A., Ph.D., U. of Missouri. Asst. Prof., Natural Resources

Markwardt, Everett D., M.S.A., Cornell U. Prof., Agricultural Engineering

Martin, Russell D., M.S., Cornell U. Prof., Communication Arts

Marx, Gerald A., Ph.D., U. of Wisconsin. Prof., Seed & Vegetable Sciences (Geneva)

Massey, Louis M., Jr., Ph.D., Cornell U. Prof., Food Science & Technology (Geneva)

Mattick, Leonard R., Ph.D., U. of Connecticut. Prof., Food Science & Technology (Geneva)

Merrill, William G., Ph.D., Cornell U. Assoc. Prof., Animal Science

Metz, Joseph F., Jr., Ph.D., Cornell U. Prof., Agricultural Economics

Millar, Roy L., Ph.D., Cornell U. Prof., Plant Pathology

Miller, Michael K., Ph.D., Penn State U. Asst. Prof., Rural Sociology

Miller, Robert D., Ph.D., Cornell U. Prof., Agronomy

Millier, William F., Ph.D., Cornell U. Prof., Agricultural Engineering
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Millman, Jason, Ph.D., U. of Michigan. Prof., Education
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Agriculture and Life Sciences	47	175
Architecture, Art, and Planning	14	31
Arts and Sciences	154	483
Biological Sciences	15	115
Business and Public Administration	6	15
Engineering	25	189
Hotel Administration	12	23
Human Ecology	37	54
Industrial and Labor Relations	6	55
Law	17	—
Nutritional Sciences	7	32
Veterinary Medicine	10	5

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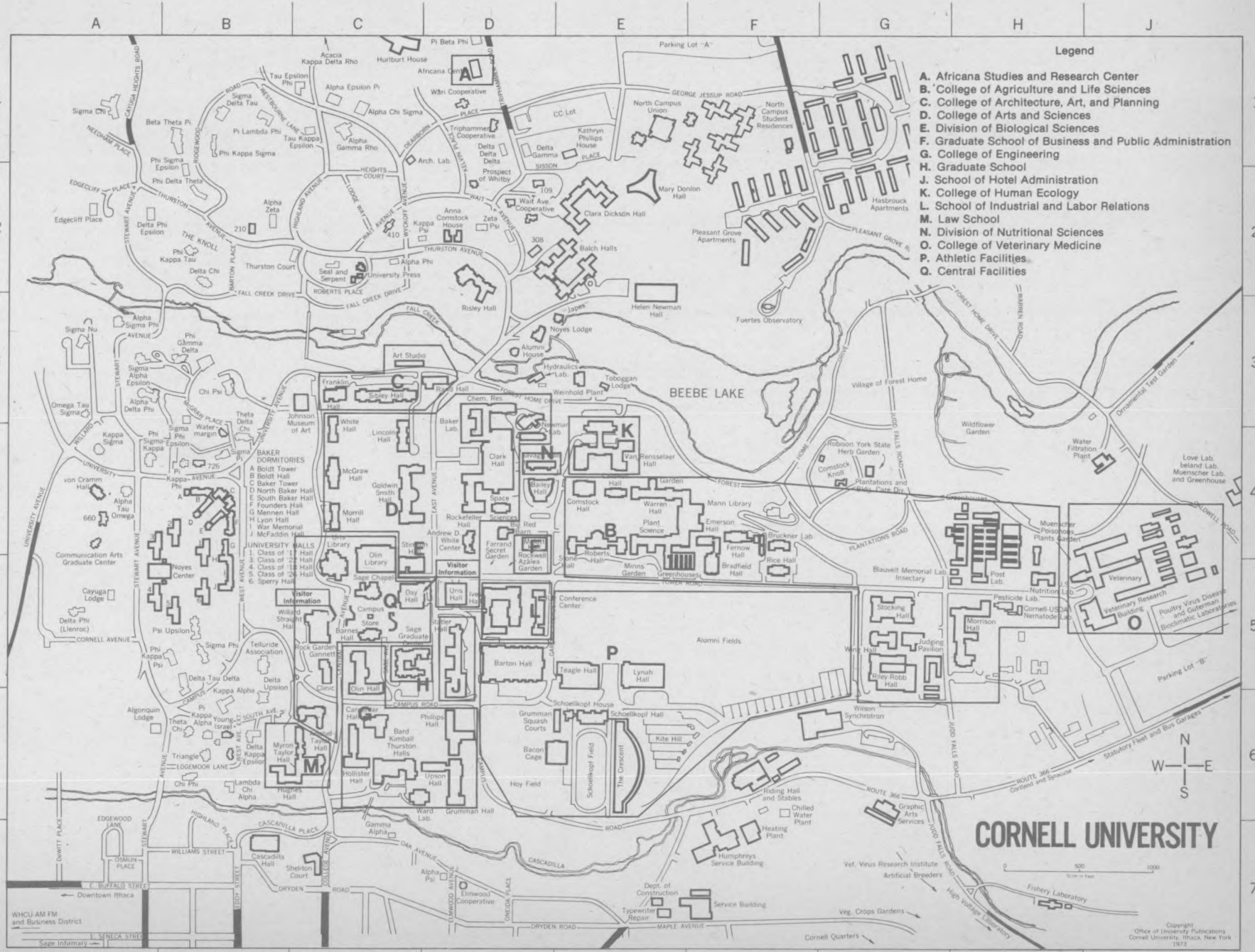
Legend
A. Africana Studies and Research Center
B. College of Agriculture and Life Sciences
C. College of Architecture, Art, and Planning
D. College of Arts and Sciences
E. Division of Biological Sciences
F. Graduate School of Business and Public Administration
G. College of Engineering
H. Graduate School
J. School of Hotel Administration
K. College of Human Ecology
L. School of Industrial and Labor Relations
M. Law School
N. Division of Nutritional Sciences
O. College of Veterinary Medicine
P. Athletic Facilities
Q. Central Facilities
BEEBE LAKE
CORNELL UNIVERSITY
Africana Center
Willard Straight Hall
Uris Library
Olin Library
Sage Chapel
Day Hall
Goldwin Smith Hall
Rockefeller Hall
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Sibley Hall
Rand Hall
Chem. Res.
Baker Lab.
Clark Hall
Bailey Hall
Comstock Hall
Warren Hall
Mann Library
Emerson Hall
Fernow Hall
Bradfield Hall
Rice Hall
Roberts Hall
Plant Science
Van Rensselaer Hall
Lincoln Hall
White Hall
McGraw Hall
Morrill Hall
Barnes Hall
Sage Graduate
Olin Hall
Carpenter Hall
Hollister Hall
Bard Kimball Thurston Halls
Phillips Hall
Upson Hall
Ward Lab.
Grumman Hall
Myron Taylor Hall
Rhodes Hall
Lambda Chi Alpha
Delta Kappa Epsilon
Triangle
Algonquin Lodge
Cayuga Lodge
Delta Phi (Llenroc)
Psi Upsilon
Phi Kappa Psi
Delta Tau Delta
Delta Upsilon
Kappa Alpha
Theta Chi
Chi Phi
Sigma Phi
Telluride Association
Rock Garden
Gannett Clinic
Campus Store
Noyes Center
Communication Arts Graduate Center
von Cramm Hall
Alpha Tau Omega
Phi Kappa Phi
Sigma Pi
Phi Sigma Kappa
Kappa Sigma
Omega Tau Sigma
Sigma Alpha Epsilon
Alpha Delta Phi
Sigma Nu
Alpha Sigma Phi
Phi Gamma Delta
Chi Psi
Theta Delta Chi
Water-margin
Johnson Museum of Art
Art Studio
Alumni House
Noyes Lodge
Hydraulics Lab.
Toboggan Lodge
Weinhold Plant
Helen Newman Hall
Risley Hall
Balch Halls
Clara Dickson Hall
Mary Donlon Hall
Kathryn Phillips House
Delta Gamma
Delta Delta Delta
Triphammer Cooperative
Wait Ave. Cooperative
Anna Comstock House
Kappa Psi
Zeta Psi
Alpha Phi
University Press
Seal and Serpent
Thurston Court
Alpha Zeta
Phi Delta Theta
Phi Sigma Epsilon
Delta Phi Epsilon
Phi Kappa Tau
Delta Chi
Edgecliff Place
Phi Kappa Sigma
Phi Lambda Phi
Tau Kappa Epsilon
Alpha Gamma Rho
Arch. Lab.
Prospect of Whitby
Alpha Chi Sigma
Alpha Epsilon Pi
Tau Epsilon Phi
Sigma Delta Tau
Beta Theta Pi
Sigma Chi
Acacia
Kappa Delta Rho
Hurlburt House
Pi Beta Phi
Wari Cooperative
North Campus Union
North Campus Student Residences
Hasbrouck Apartments
Pleasant Grove Apartments
Fuertes Observatory
Village of Forest Home
Wildflower Garden
Robison York State Herb Garden
Comstock Knoll
Plantations and Kids Care Div.
Ornamental Tree Garden
Water Filtration Plant
Love Lab.
Ieland Lab.
Muenscher Lab.
and Greenhouse
Muenscher Poisonous Plants Garden
Veterinary
Veterinary Research Building
Poultry Virus Disease and Guterman Biochemistry Laboratories
Nutrition Lab.
Pesticide Lab.
Cornell-USDA Nematode Lab.
Blauvelt Memorial Lab. Insectary
Post Lab.
Greenhouses
Bruckner Lab.
Stocking Hall
Morrison Hall
Judging Pavilion
Riley-Robb Hall
Wing Hall
Alumni Fields
Conference Center
Teagle Hall
Lynah Hall
Barton Hall
Schoellkopf House
Schoellkopf Hall
Grumman Squash Courts
Bacon Cage
Schoellkopf Field
The Crescent
Kite Hill
Hoy Field
Wilson Synchrotron
Riding Hall and Stables
Chilled Water Plant
Graphic Arts Services
Heating Plant
Humphreys Service Building
Vet. Virus Research Institute
Artificial Breeders
Fishery Laboratory
High Voltage Laboratory
Veg. Crops Gardens
Cornell Quarters
Dept. of Construction
Typewriter Repair
Service Building
Elmwood Cooperative
Cascadilla Hall
Sheldon Court
Gamma Alpha
Young Israel
Parking Lot "A"
Parking Lot "B"
CC Lot
Statutory Fleet and Bus Garages
ROUTE 366 Cortland and Syracuse
Downtown Ithaca
WHCU-AM FM and Business District
Sage Infirmary
E. SENECA STREET
E. BUFFALO STREET
DRYDEN ROAD
FALL CREEK DRIVE
THURSTON AVENUE
CAMPUS ROAD
CASCADILLA PLACE
OAK AVENUE
WILLIAMS STREET
EDGEWOOD LANE
OSMUN PLACE
DAWITT PLACE
EDDY STREET
COLLEGE AVENUE
ELMWOOD AVENUE
ONEIDA PLACE
MAPLE AVENUE
EAST AVENUE
WEST AVENUE
UNIVERSITY AVENUE
STEWART AVENUE
HIGHLAND AVENUE
CAYUGA HEIGHTS ROAD
NEEDHAM PLACE
EDGECLIFF PLACE
THE KNOLL
BARTON PLACE
ROBERTS PLACE
RIDGEWOOD ROAD
WESTBOURNE LANE
DEARBORN PLACE
HEIGHTS COURT
LODGE WAY
WAIT AVENUE
TRIPHAMMER ROAD
SISSON PLACE
GEORGE JESSUP ROAD
PLEASANT GROVE RD.
FOREST HOME DRIVE
JUDD FALLS ROAD
WARREN ROAD
CALDWELL ROAD
PLANTATIONS ROAD
TOWER ROAD
CORNELL AVENUE
EDGEMOOR LANE
HIGHGATE PLACE
WELLARD
UNIVERSITY HALLS
1. Class of '17 Hall
3. Class of '22 Hall
4. Class of '18 Hall
5. Class of '20 Hall
6. Sperry Hall
BAKER DORMITORIES
A Boldt Tower
B Boldt Hall
C Baker Tower
D North Baker Hall
E South Baker Hall
F Founders Hall
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